ORDER NO. KM48710250G1
F5

Technical Guide

EASA-PHONE
EMSS PROPRIETARY TELEPHONE

KX-T123220

BLOCK DIAGRAM\БЛОК-СХЕМА
KEY INPUT CIRCUIT\СХЕМА КЛАВИАТУРЫ
RESET CIRCUIT\СХЕМА ПЕРЕЗАГРУЗКИ
POWER SUPPLY CIRCUIT\СХЕМА ИСТОЧНИКА ПИТАНИЯ
TONE GENERATION CIRCUIT\СХЕМА ГЕНЕРАЦИИ ТОНАЛЬНОГО СИГНАЛА
DATA COMMUNICATION CIRCUIT\СХЕМА ПЕРЕДАЧИ ДАННЫХ
LED CIRCUIT\СХЕМА ИНДИКАТОРА
HANDSET CIRCUIT\СХЕМА ТРУБКИ
SPEAKERPHONE CIRCUIT\СХЕМА СПИКЕРФОНА

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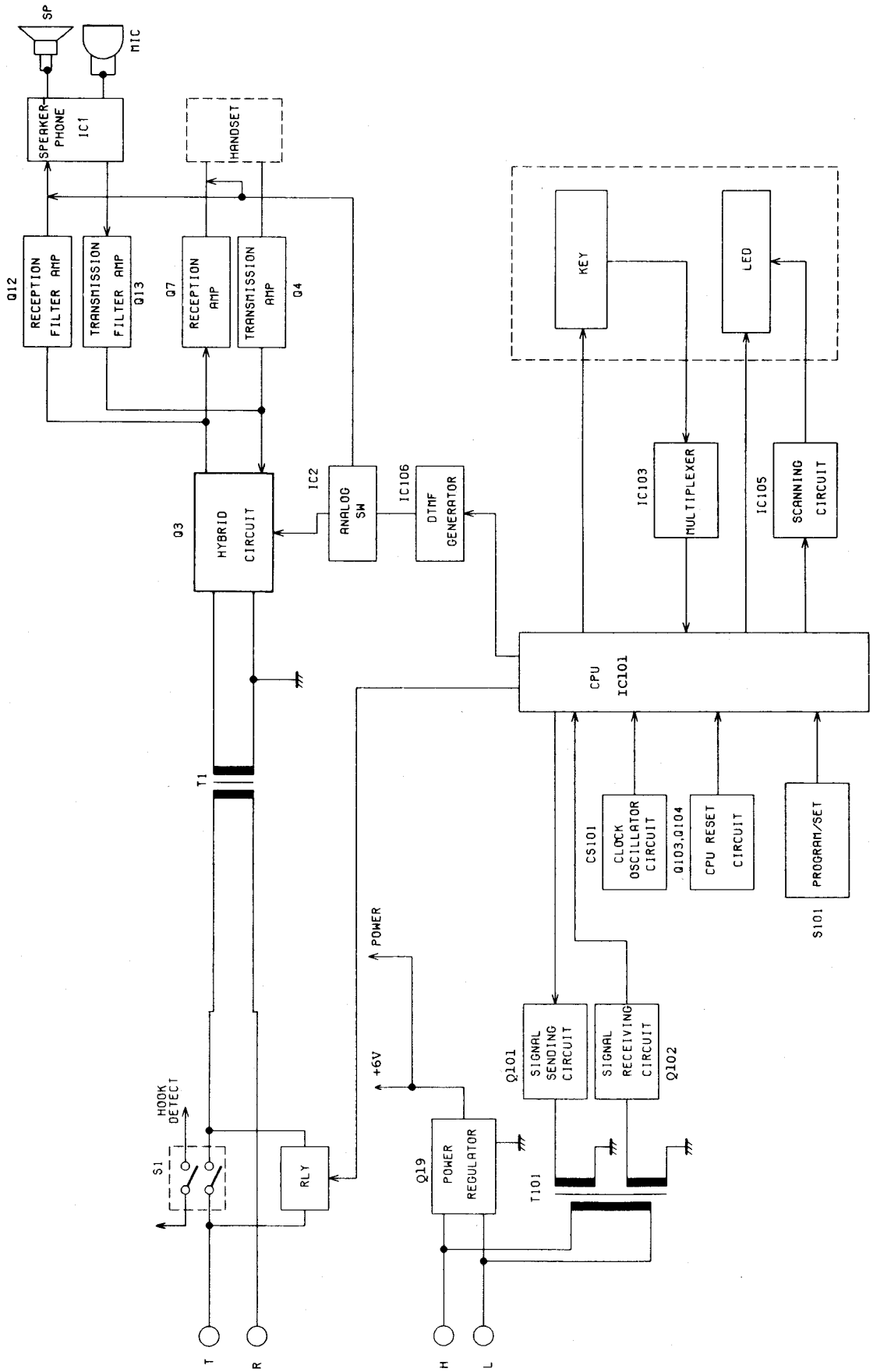
1. BLOCK DIAGRAM

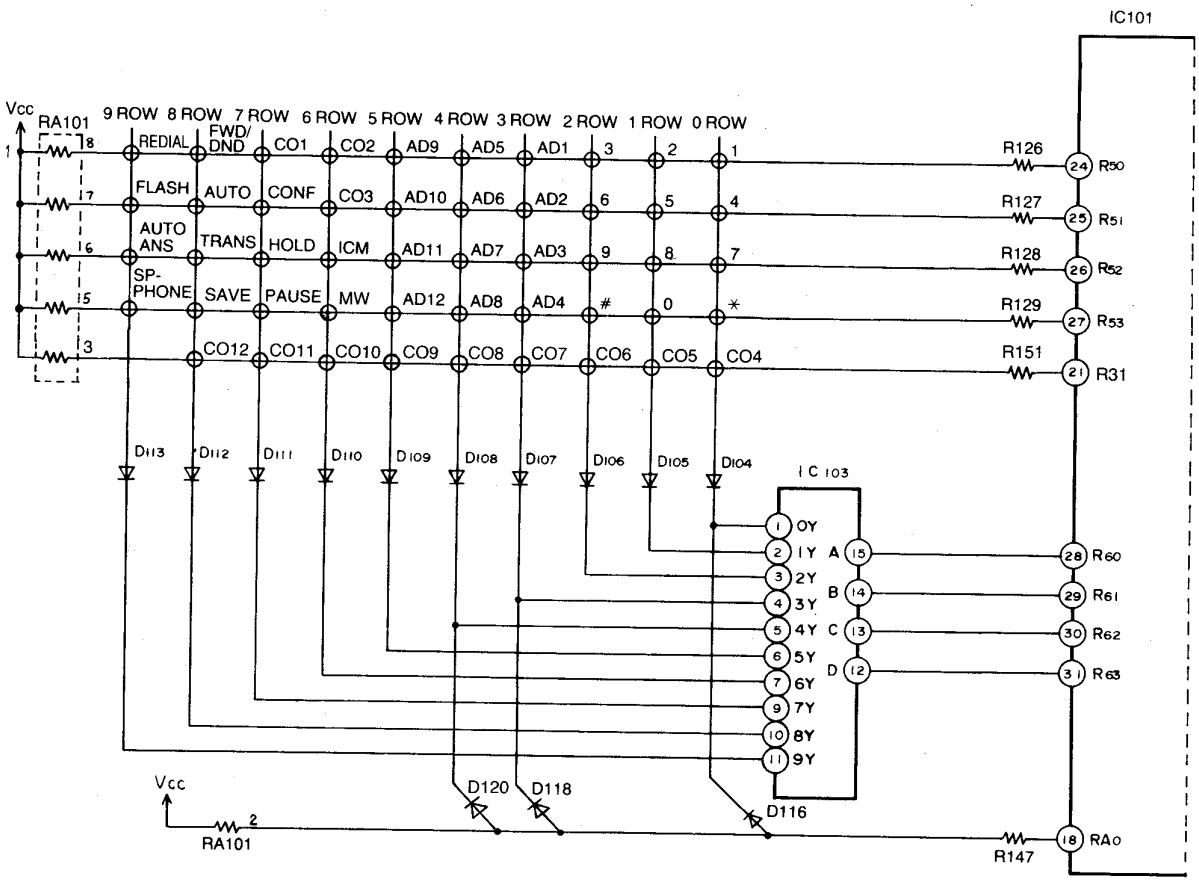


2. KEY INPUT CIRCUIT

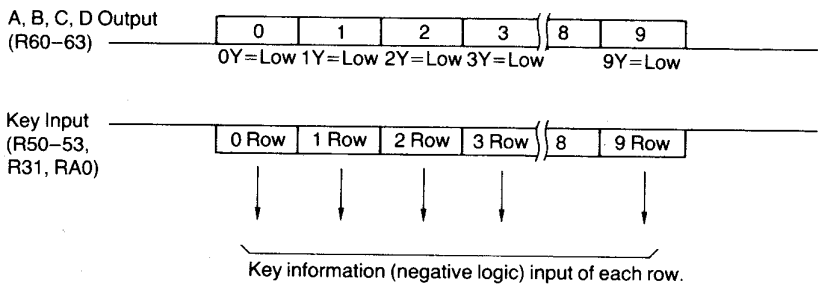
Circuit Operation:

Sequential input information (negative logic) from the EMSS proprietary telephone is executed by dynamic scanning. The ports 0Y to 9Y of IC103 are brought to low status consecutively, by the pulse sent from the ports R60 to R63 of IC101. If a key is pressed, the input of key-in information is executed by ports R50 to R53 and R31.

Circuit Diagram



Key Input Control Timing Chart



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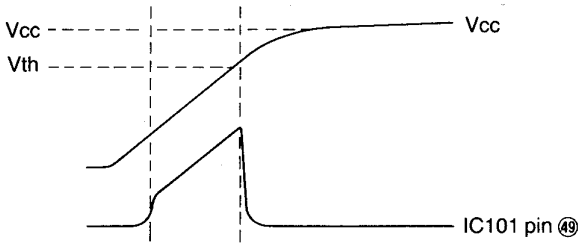
3. RESET CIRCUIT

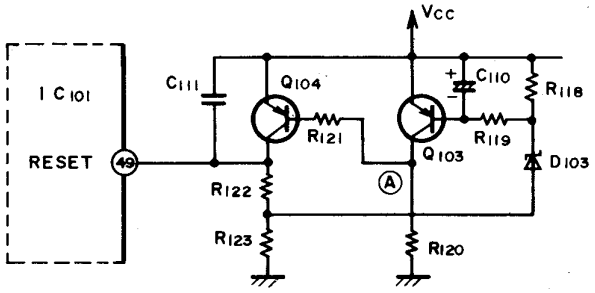
Circuit Operation:
This circuit is used for transmission of a reset pulse to the CPU (IC101) at the following times, connecting the telephone line jack, circuit operation. The timing chart is shown below.

Power ON → Q104 ON → IC101 (pin 49) high level → Q103 ON → (A) high level → Q104 OFF → IC101 (pin 49) low level

Timing Chart



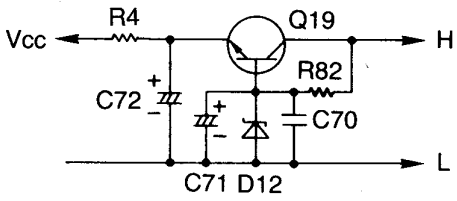
Circuit Diagram



4. POWER SUPPLY CIRCUIT

Circuit Operation:
The +15V DC, provided from the EMSS is converted to +6V by the voltage regulator circuit composed of Q19, R82 and D12 etc.

Circuit Diagram

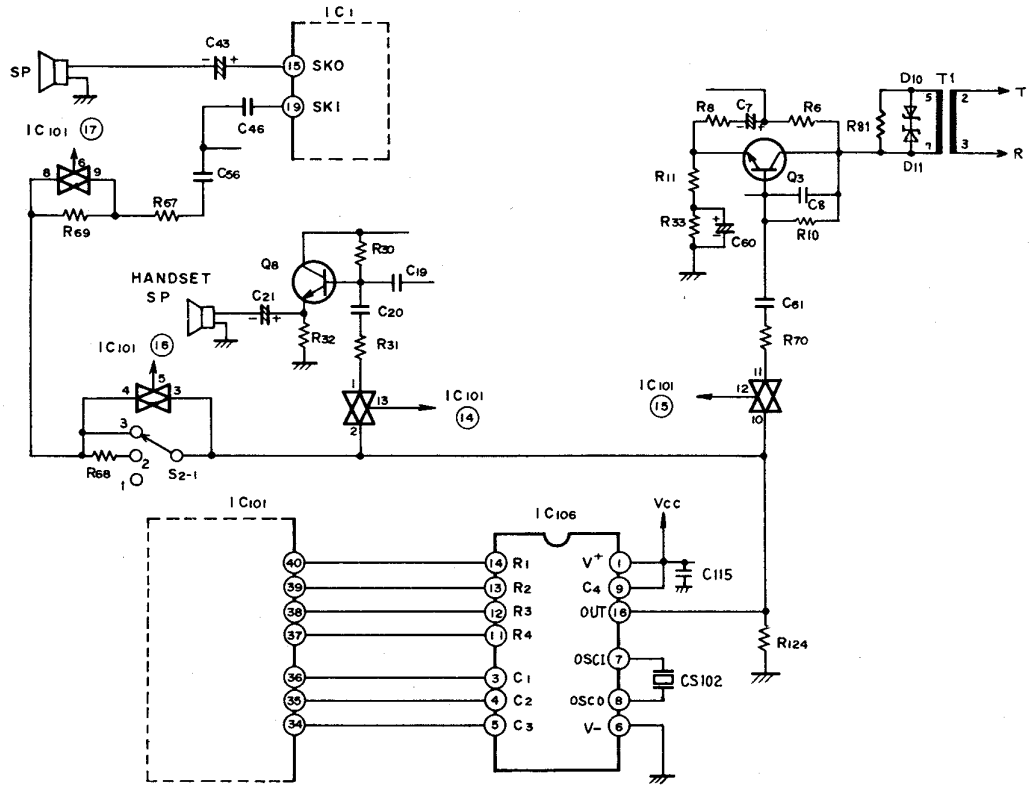


5.TONE GENERATION CIRCUIT

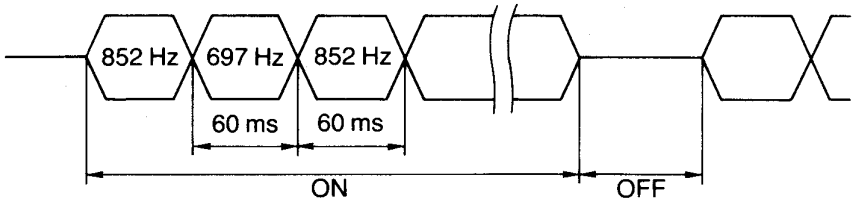
Function:
This circuit generates all system tones including COL, extension, busy, DTMF signals and key in confirmation tones during the power failure mode and is comprised of IC106 (DTMF Generator IC) and IC2 (Analog Switch).

Circuit Operation:
IC106 is the DTMF generator IC.
For an output of a single row tone, the row terminal and the each column terminals intersecting with it are required to be brought a low state. For a dual tone output, one row terminal and one column terminal are brought to low state.

Circuit Diagram



1) Calling Tones from COL and EXT
For a calling tone from a CO line or extension, only pin 6 of IC2 (Analog Switch) is brought to high state thus the single row tone signal shown below is outputted from IC106, and the tone volume is controlled by S2-1.



IC106 pin 16 → S2-1 → IC2 pin 8-9 → R67 → C56 → C46→ IC1 pin 19 → IC1 pin 15 → C43 → SP

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2) Busy Station Calling Tone

When pin 5 of IC2 (Analog Switch) is brought to a high state, this is done in the same way as for an COL or an extension lines calling tone.
852 Hz and 697 Hz signals are outputted from IC106 alternately at intervals of 60 ms.
The signal flow is shown below.

IC106 pin 16 → IC2 pin 3-4 → R69 → R67 → C56 → C46 → IC1 pin 19 → IC1 pin 15 → C43 → SP

3) DTMF Signal

When pins 5, 12 and 13 of IC2 are brought to a high state, a DTMF tone is generated by the logic combination as shown below.
The signal flow is shown below.

IC106 pin 16 → (To Telephone Line) IC2 pin 10-11 → R70 → C61 → Q3 → T1 → Telephone Line
IC106 pin 16 → (To Monitor) IC2 pin 2-1 → R31 → C20 → Q8 → C21 → Handset Speaker
(IC2 pin 3-4 → R69 → R67 → C56 → C46 → IC1 pin 19 → IC1 pin 15 → C43 → SP)

DTMF Frequency Table

		High Group		
		1209 Hz	1336 Hz	1477 Hz
Low Group	697 Hz	1	2	3
	770 Hz	4	5	6
	852 Hz	7	8	9
	941 Hz	*	0	#

Truth Table

	C1	C2	C3	R1	R2	R3	R4
1	L	H	H	L	H	H	H
2	H	L	H	L	H	H	H
3	H	H	L	L	H	H	H
4	L	H	H	H	L	H	H
5	H	L	H	H	L	H	H
6	H	H	L	H	L	H	H
7	L	H	H	H	H	L	H
8	H	L	H	H	H	L	H
9	H	H	L	H	H	L	H
*	L	H	H	H	H	H	L
0	H	L	H	H	H	H	L
#	H	H	L	H	H	H	L

4) Key-in Tone

An 852 Hz single tone is used as the key-in tone. When pins 13 and 6 of IC2 are brought to a high state, a tone is generated from IC106 and is heard at the speaker.
The signal flow is shown below.

IC106 pin 16 → IC2 pin 2-1 → R31 → C20 → Q8 → C21 → Handset Speaker
IC106 pin 16 → IC2 pin 3-4 → R69 → R67 → C56 → C46 → IC1 pin 19 → IC1 pin 15 → C43 → SP

6. DATA COMMUNICATION CIRCUIT

Function:
The data communication circuit serves the following functions:
Information exchanger between the EMSS and EMSS proprietary telephone, key input information as well as data for the LED control, etc. this information is continuously exchanged at all times.

Circuit Operation:
When the EMSS proprietary telephone receives an IRQ signal from the EMSS and after sending the key input information (19 pulses) to the EMSS and receiving data (47 pulses) for LED control, etc. The EMSS proprietary telephone will return to the EMSS an acknowledge signal.

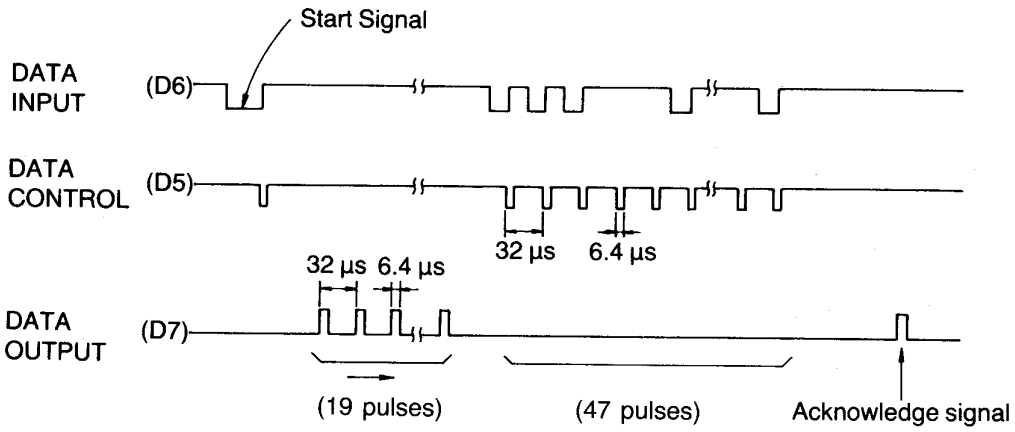
1) Reception
The data from the EMSS is received via the H and L line along the path shown below.

H, L Line → T101 → R106 → Q102 → IC104 → IC101 pin 60

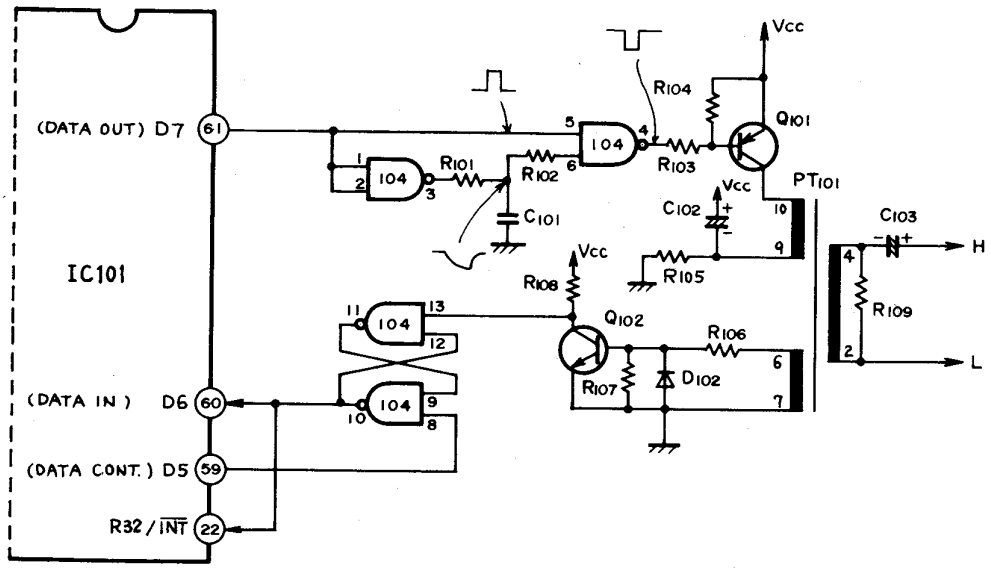
2) Transmission
The data to the EMSS proprietary telephone is transmitted along the following path.

IC101 pin 61 → IC104 → R103 → Q101 → PT101 → H, L Line

Timing Chart



Circuit Diagram



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7. LED CIRCUIT

Circuit Operation:

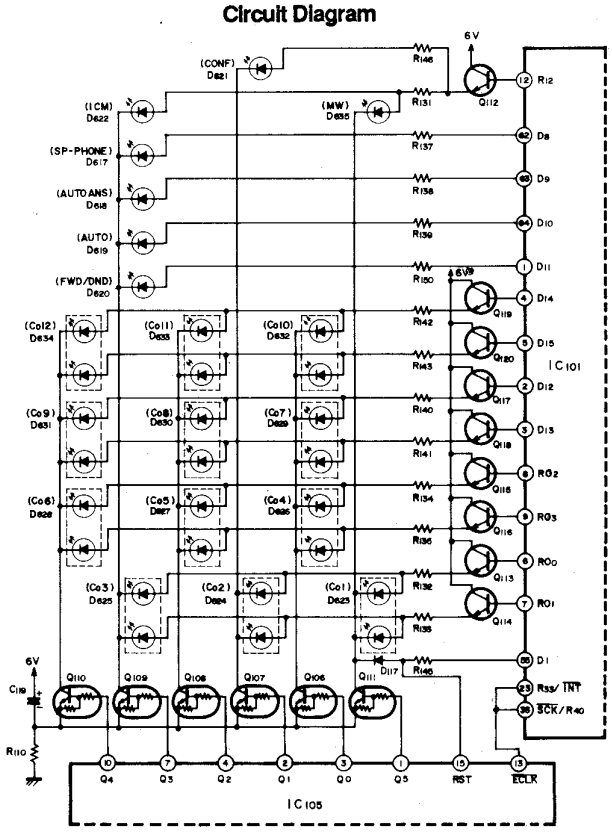
The LED executes dynamic lighting for the status indicators, and control is executed by the output ports Q0 to Q5 (column) of the decode counter (IC105) and D8 to D15, R00 to R03 and R12 (row) of IC101.

When data transmission between the EMSS and the EMSS proprietary telephone is started, a fixed pulse (T=3.3msec, 1/2 duty) is output continuously from the SCK terminal of IC101, and this pulse is counted, and the output of IC105 is shifted sequentially from Q0 to Q3 and Q5. When Q5 becomes a high level, a high is output at the same time from pin 55 of IC101.

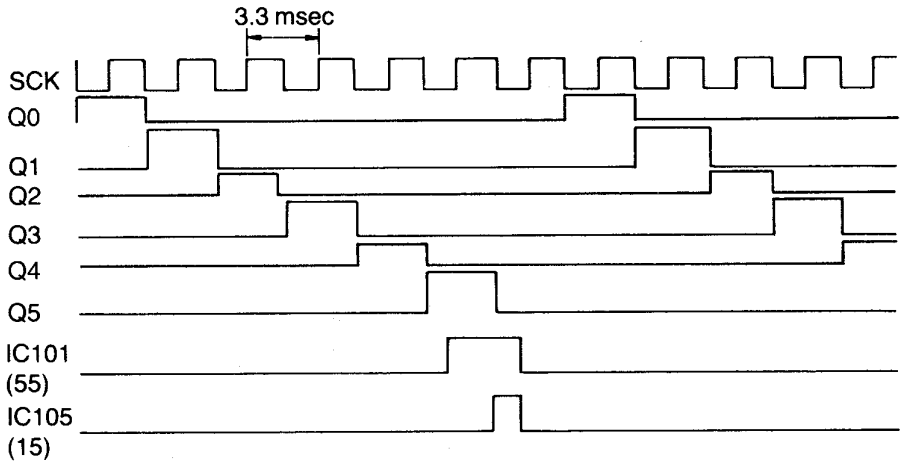
When the level on IC105 (Q5) changes from a high to a low by the next pulse, pin 15 of IC105 becomes a high, so that the counter is reset, and output again will be executed sequentially from Q0.

On the other hand, D8 to D15 of IC101 plus R00 to R03 and R12 also output pulses, and the lighting of the LED is controlled by the timing of the outputs of IC105.

Circuit Diagram



Timing Chart



8. HANDSET CIRCUIT

Circuit Operation:
When the hook switch is ON (Off-Hook), pin 41 of IC101 turns to a high state. As the results, the power to the handset is ON.

1) Transmission Signal Path
The input signal from the microphone is sent to the telephone line via the following path:

MIC → C12 → R17 → R16 → C11 → Q4 → R12 → C9 → Q3 → T1 → Telephone Line

2) Reception Signal Path
The signal from the telephone line is emitted from receiver via the following path:

Telephone Line → T1 → R6 → C15 → R22 → R23 → C17 → Q7 → C19 → Q8 → C21 → Receiver

9. SPEAKERPHONE CIRCUIT

Function:
This circuit controls the automatic switching of the transmitted and received signals, to and from the telephone line, when the unit is used in the hands-free mode.

Circuit Operation:
The speakerphone can only provide a one-way communication path.
In other words, it can either transmit an outgoing signal or receive an incoming signal at a given time, but cannot do both simultaneously. Therefore, a switching circuit is necessary to control the flow of the outgoing and incoming signals. This switching circuit is contained in IC1 and consists of a Voice Detector, Tx Attenuator, Rx Attenuator, Comparator and Attenuator Control. The circuit analyzes whether the Tx (transmit) or the Rx (receive) signal is louder,and then it processes the signals such that the louder signal is given precedence.
The Voice Detector provides a DC input to the Attenuator Control corresponding to the Tx signal.
The Comparator receives a Tx and Rx signal, and supplies a DC input to the Attenuator Control corresponding to the Rx signal. The Attenuator Control provides a control signal to the Tx and the Rx Attenuator to switch the appropriate signals ON and OFF. The Attenuator Control also detects the level of the volume control to automatically adjust for changing ambient conditions.

1) Transmission Signal Path
The input signal from the microphone is sent through the circuit via the following path:

MIC → C52 → IC1 pin 9 → IC1 pin 10 → IC1 pin 3 → IC1 pin 4 → Q13 → Q3 → Telephone Line

2) Reception Signal Path
Signals received from the telephone line are outputted at the speaker via the following path:

Telephone Line → R6 → R37 → C24 → Q12 → IC1 pin 27 → IC1 pin 26 → Q30→ IC1 pin 19 → IC1 pin 15 → SP

3) Control Signal Path
Control signals for transmission and reception are inputted to IC1 via the following path:

(Transmission Control Signal Path)
MIC → IC1 pin 9 → IC1 pin 10 → IC1 pin 3 → IC1 pin 4 → Q13 → IC1 pin 5

(Reception Control Signal Path)
Telephone Line → Q3 → Q12 → IC1 pin 7

4)Transmission/Reception Switching
The comparison result between Tx and Rx outputs as a DC level at IC1 pin 23 .
Tx level is high .....pin 23 = pin 20 - 6 mV
Rx level is high.....pin 23 = pin 20 - 150mV
The comparator output is connected to the attenuator control inside IC1.

5) Voice Detector
The output of the mic amp (pin 10 of IC1) is supplied to pin 13 of IC1 as a control signal for the voice detector.

6) Attenuator Control
The attenuator control detects the setting of the volume control through pin 24 of IC1 and automatically adjusts for changing ambient conditions.

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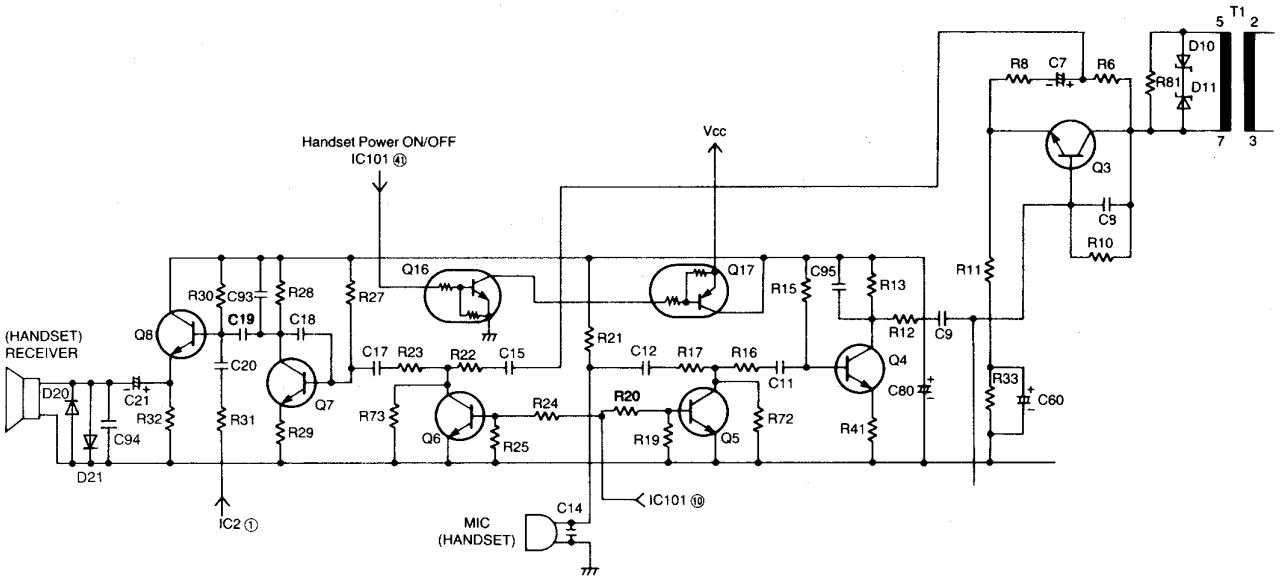
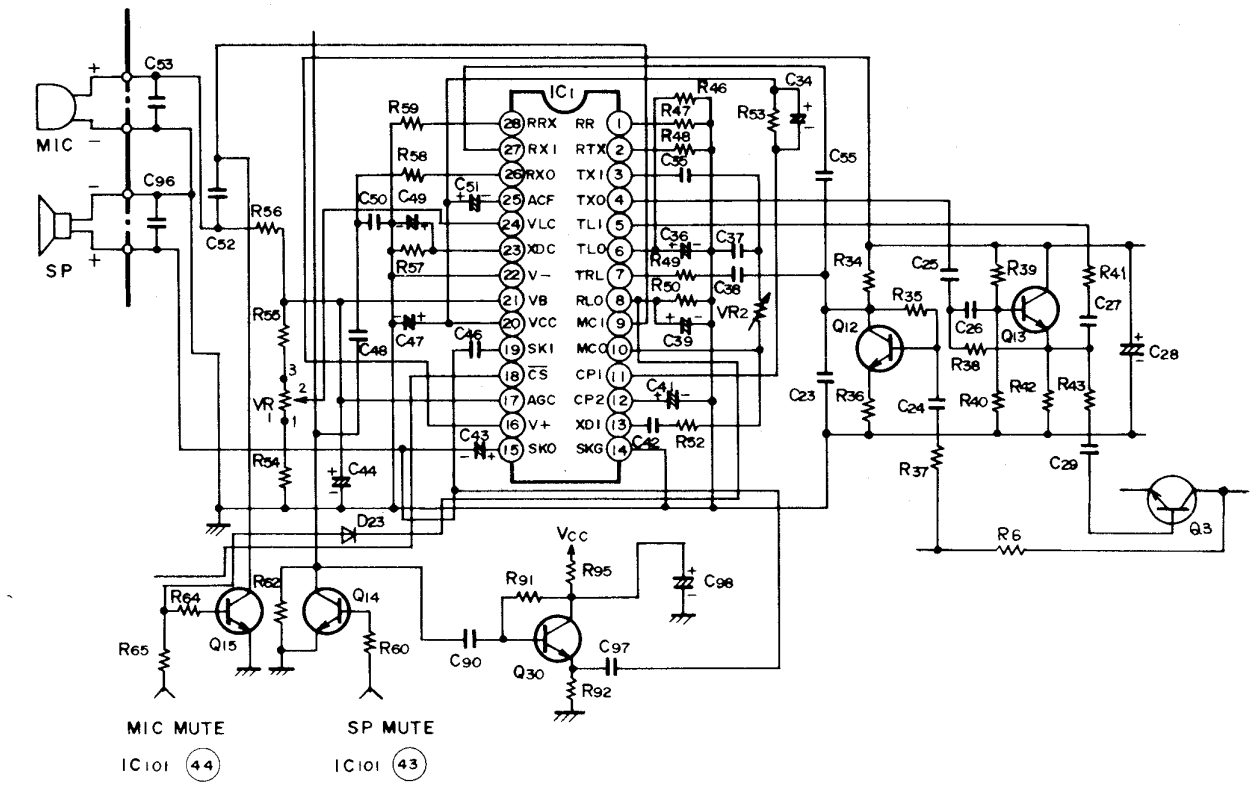
Handset Circuit Diagram



Speakerphone Circuit Diagram



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Service Manual

EASA-PHONE

ELECTRONIC MODULAR SWITCHING SYSTEM

KX-T123210

SPECIFICATIONS\ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ
NAME AND LOCATION\НАИМЕНОВАНИЕ И РАСПОЛОЖЕНИЕ
CONNECTION\СОЕДИНЕНИЕ
INSTALLATION\УСТАНОВКА
PROGRAMMING\ПРОГРАММИРОВАНИЕ
FOR SERVICE TECHNICIANS\ДЛЯ СЕРВИСНОГО ОБСЛУЖИВАНИЯ
DISASSEMBLY INSTRUCTIONS\МЕТОДИКА РАЗБОРКИ
IC I/O DATA\ОПИСАНИЕ МИКРОСХЕМ
BLOCK DIAGRAM\БЛОК-СХЕМА
SCHEMATIC DIAGRAMS\ПРИНЦИПИАЛЬНАЯ СХЕМА
IC BLOCK DIAGRAM\БЛОК-СХЕМА ИНТЕГРАЛЬНЫХ МИКРОСХЕМ
TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES\ЦОКОЛЕВКА ВЫВОДОВ ИНТЕГРАЛЬНЫХ МИКРОСХЕМ, ТРАНЗИСТОРОВ И ДИОДОВ
ADJUSTMENTS\РЕГУЛИРОВКИ
EXTENSION BOARD CONNECTING METHOD\МЕТОДИКА ПОДСОЕДИНЕНИЯ СЕРВИСНЫХ ПЛАТ
CABINET AND ELECTRICAL PARTS LOCATION\РАСПОЛОЖЕНИЕ ЧАСТЕЙ КОРПУСА И ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ
ACCESSORIES AND PACKING MATERIALS\ДОПОЛНИТЕЛЬНЫЕ ПРИНАДЛЕЖНОСТИ И УПАКОВОЧНЫЕ МАТЕРИАЛЫ
REPLACEMENT PARTS LIST\СПИСОК ЗАПАСНЫХ ЧАСТЕЙ

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Panasonic

SPECIFICATIONS

General Description

1.	Capacity	Outsides(CO)	Max 12
		Stations	Max 32
2.	Control Method	Stored Program CPU: 8 bits CPU Control ROM: 192 KB, Control RAM : 64KB	
3.	Switching	Space Division CMOS Crosspoint Switch	
4.	Power Supplies	Primary	AC 120V 60Hz
		Secondary	Station Supply Volt : 26V Circuit Volt : +5V, +12V, -14V, -16V, ±7V
		Power Failure	●Max 6 outsides assigned to stations ……power failure transfer ●System operation for several hours by recommended battery (car type batteries - consisting of two 12 VDC, 16 amp / hour maximum rating).
5.	Dialing	Outward	Dial Pulse 10PPS, 20PPS Tone Dial
		Internal	Dial Pulse 10PPS, 20PPS Tone Dial
		Mode Conversion	DP-DTMF, DTMF-DP
6.	Intercom paths	5	
7.	Outside (CO)-Outside (CO) paths	2	
8.	Connector	Outsides (CO)	Modular Jack (RJ-11)
		Station	Amphenol Connector
		Paging Output	Pin Jack (RCA JACK)
		External Music Input	two-conductors Jack (MINIJACK 9/64 inch diameter)
9.	EXT Connection	Cable	1 pair wire (Standard Telephone) 2 pair wire (KX-T123230/KX-T123220/KX-T123250/KX-T61630/KX-T61620/KX-T61631/KX-T61650/KX-T30830/KX-T30820/KX-T30850)
10.	SMDR [Station Message Detail Recording]	Interface	RS-232C
		Output Equipment	Printer, Data Terminal
		Detail Recording	Data, Time, Ext. Number, CO Number, Calling Number, Calling Time, Account Code

Characteristics

1.	Station Loop Limit	KX-T123230/KX-T123220/KX-T123250/KX-T61630/KX-T61620/KX-T61650/KX-T61631/KX-T30830/KX-T30820/KX-T30850	40 ohms
		Standard Telephone	600 ohms including set
		Doorphone	20 ohms
2.	Minimum Leak Resistance	15,000 ohms	
3.	Maximum Number of Station Instruments per Line	1 (KX-T123230, KX-T123220, KX-T123250, KX-T61630, KX-T61631, KX-T61620, KX-T61650, KX-T30830, KX-T30820, KX-T30850 or Standard telephone)	
4.	Ring Voltage	70 Vrms at 20 Hz depends on Ringing Load	
5.	Primary Power	120 Vac, 60 Hz, 1.4 A maximum	
6.	Central Office Loop Limit	1600 ohms maximum	
7.	Environmental Requirements	0-40 C, 10%-90%	
8.	Hookswitch Flash Timing Range	204-1000 msec	

Dimensions and Weight

1. Dimensions.....382 (W) x 477 (H) x 198 (D) mm
   (15 1/32" x 18 25/32" x 7 13/16")
2. Weight.....9.45 kg (20 lb 13 oz)

Design and specifications are subject to change without notice.

NAME AND LOCATION

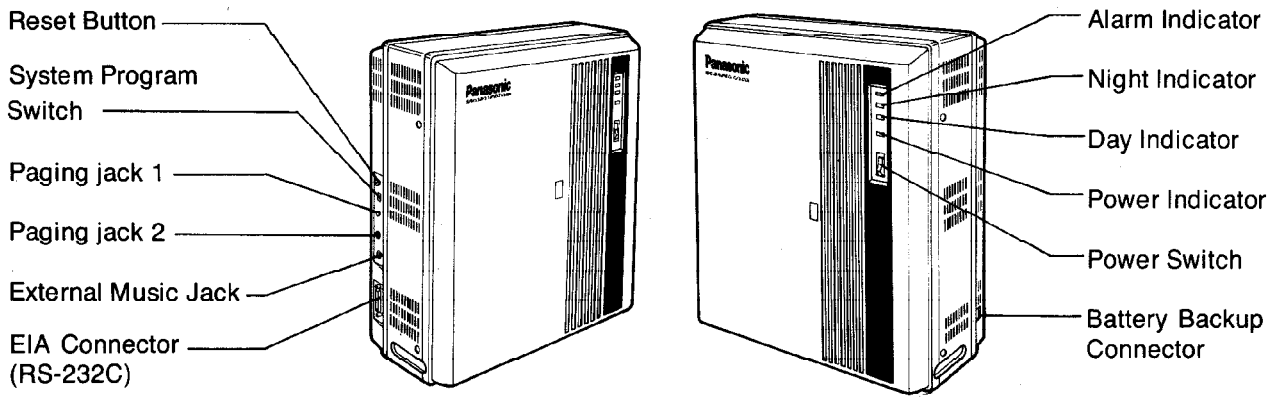
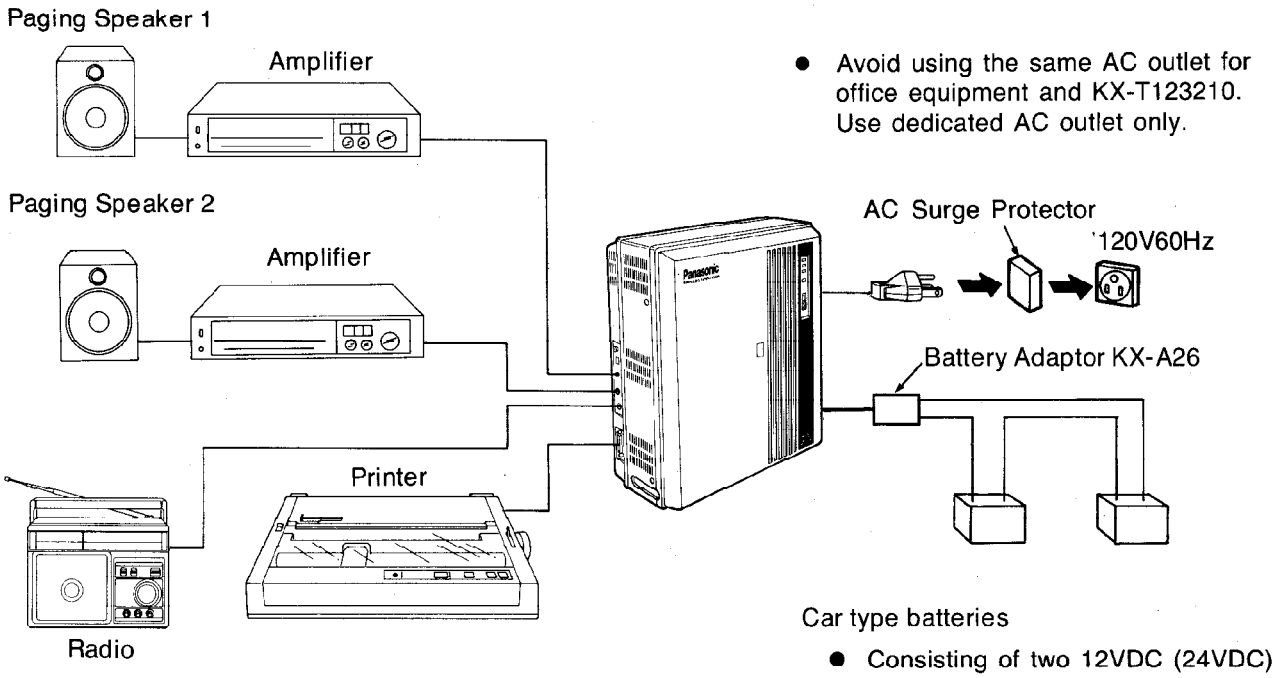


Fig. 3

CONNECTION



- Avoid using the same AC outlet for office equipment and KX-T123210. Use dedicated AC outlet only.
- Consisting of two 12VDC (24VDC)

Fig. 4

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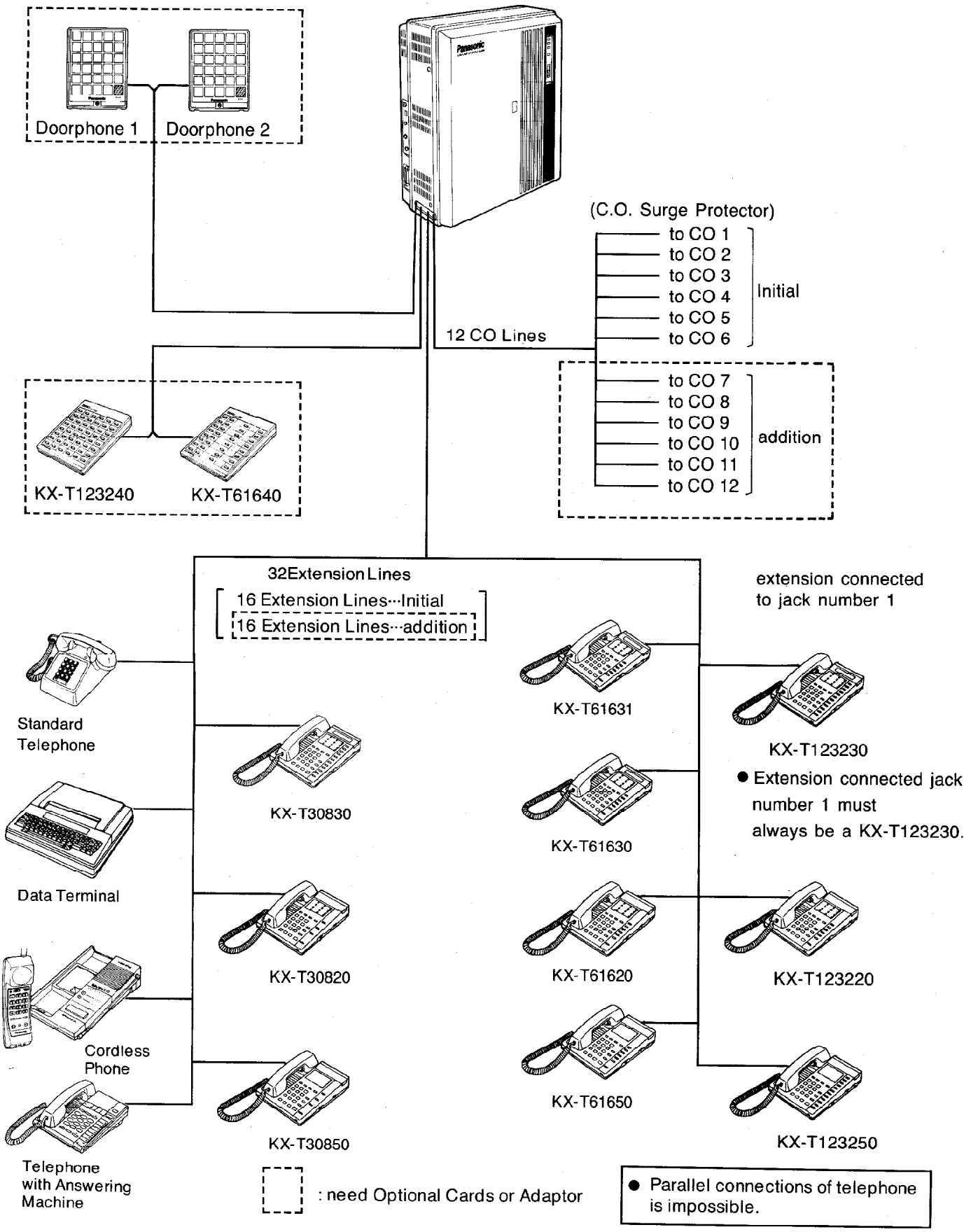

Doorphone 1
Doorphone 2
(C.O. Surge Protector)
to CO 1
to CO 2
to CO 3
to CO 4
to CO 5
to CO 6
Initial
12 CO Lines
to CO 7
to CO 8
to CO 9
to CO 10
to CO 11
to CO 12
addition
KX-T123240
KX-T61640
32Extension Lines
16 Extension Lines···Initial
16 Extension Lines···addition
extension connected to jack number 1
Standard Telephone
KX-T30830
KX-T61631
KX-T123230
● Extension connected jack number 1 must always be a KX-T123230.
KX-T61630
Data Terminal
KX-T30820
KX-T61620
KX-T123220
Cordless Phone
KX-T30850
KX-T61650
KX-T123250
Telephone with Answering Machine
: need Optional Cards or Adaptor
● Parallel connections of telephone is impossible.

Fig. 5

INSTALLATION

Frame Ground Connection

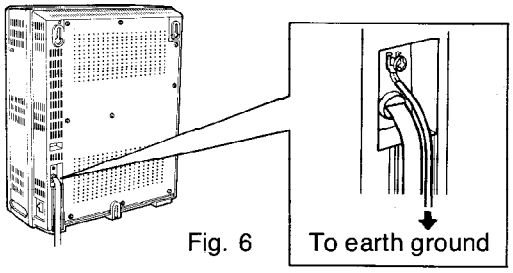
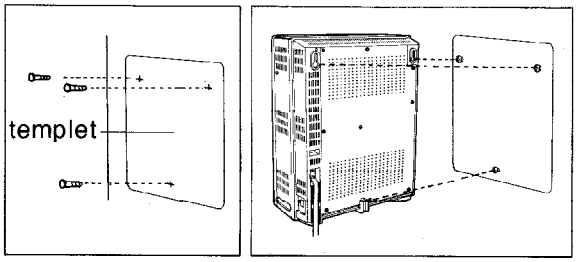


Fig. 6

Wall Mounting

1. Place the templet (included) on the wall to mark the 3 screw positions.
2. Install the 3 screws into the wall.
3. Hook the unit on the screw heads.

Fig. 7



How to remove the front cover from unit

1. Unscrew the front cover of the unit. There are four screws.
2. Open the front cover in the direction of the arrow Ⓐ.

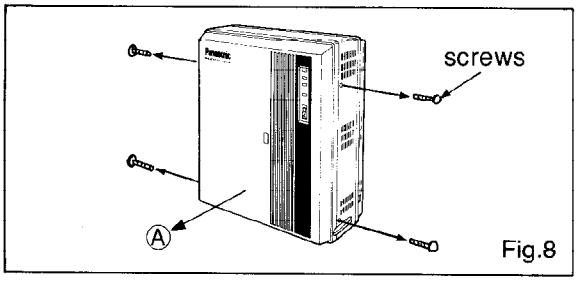


Fig.8

Rechargeable Battery Installation

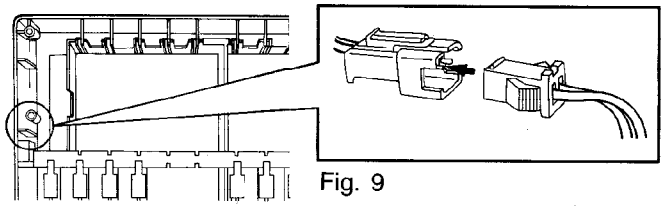
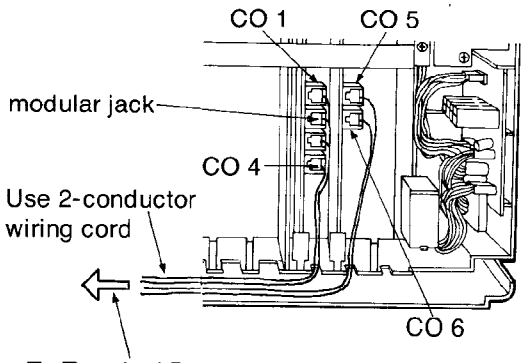


Fig. 9

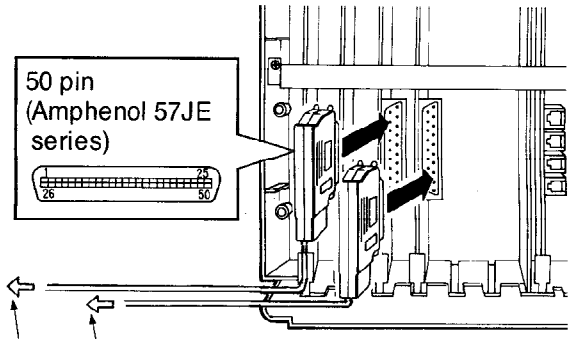
Central Office Line Connection (CO1 through 6)

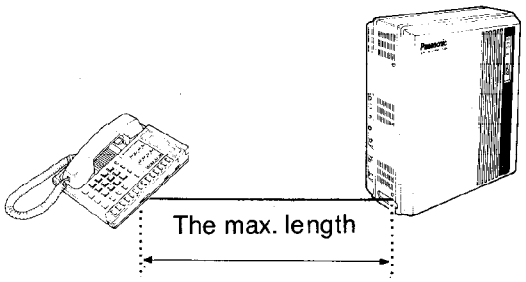


- To Terminal Board or Modular Jacks from the Central Office (CO).

Fig. 10

Extension Connection (Jack number 1 through 16)





Proprietary Telephone
- 26 AWG: Under 460 feet
- 24 AWG: Under 750 feet
- 22 AWG: Under 1180 feet

Twisted cable

Standard Telephone
- 26 AWG: Under 2290 feet
- 24 AWG: Under 3700 feet
- 22 AWG: Under 5900 feet

Twisted cable

Fig. 11

Cable Pin Numbers to be connected

■ Connection of the Proprietary Telephone (4-conductor wiring is required for each extension.)

CONN. PIN	CABLE COLOR	CLIP NO.	LC-1		LC-2	
26	WHT-BLU	1		T		T
1	BLU-WHT	2		R		R
27	WHT-ORN	3	JACK	D1	JACK	D1
2	ORN-WHT	4	NO.1	D2	NO.9	D2
28	WHT-GRN	5				
3	GRN-WHT	6				
29	WHT-BRN	7		T		T
4	BRN-WHT	8		R		R
30	WHT-SLT	9	JACK	D1	JACK	D1
5	SLT-WHT	10	NO.2	D2	NO.10	D2
31	RED-BLU	11				
6	BLU-RED	12				
32	RED-ORN	13		T		T
7	ORN-RED	14		R		R
33	RED-GRN	15	JACK	D1	JACK	D1
8	GRN-RED	16	NO.3	D2	NO.11	D2
34	RED-BRN	17				
9	BRN-RED	18				
35	RED-SLT	19		T		T
10	SLT-RED	20		R		R
36	BLK-BLU	21	JACK	D1	JACK	D1
11	BLU-BLK	22	NO.4	D2	NO.12	D2
37	BLK-ORN	23				
12	ORN-BLK	24				
38	BLK-GRN	25		T		T
13	GRN-BLK	26		R		R
39	BLK-BRN	27	JACK	D1	JACK	D1
14	BRN-BLK	28	NO.5	D2	NO.13	D2
40	BLK-SLT	29				
15	SLT-BLK	30				
41	YEL-BLU	31		T		T
16	BLU-YEL	32		R		R
42	YEL-ORN	33	JACK	D1	JACK	D1
17	ORN-YEL	34	NO.6	D2	NO.14	D2
43	YEL-GRN	35				
18	GRN-YEL	36				
44	YEL-BRN	37		T		T
19	BRN-YEL	38		R		R
45	YEL-SLT	39	JACK	D1	JACK	D1
20	SLT-YEL	40	NO.7	D2	NO.15	D2
46	VIO-BLU	41				
21	BLU-VIO	42				
47	VIO-ORN	43		T		T
22	ORN-VIO	44		R		R
48	VIO-GRN	45	JACK	D1	JACK	D1
23	GRN-VIO	46	NO.8	D2	NO.16	D2
49	VIO-BRN	47				
24	BRN-VIO	48				
50	VIO-SLT	49				
25	SLT-VIO	50				

T : Tip D1 : Data 1
R : Ring D2 : Data 2

■ Connection of a Standard Telephone (2-conductor wiring is required for each extension.)
Connect the pin number of "T" and "R" only.

Optional Cards Installation

1. To protect the printed circuit board from static electricity, first discharge any body static by touching the metal board.
2. Loosen the screws to remove the metal board.
3. The location of the optional cards for the KX-T123210 is shown in the following.

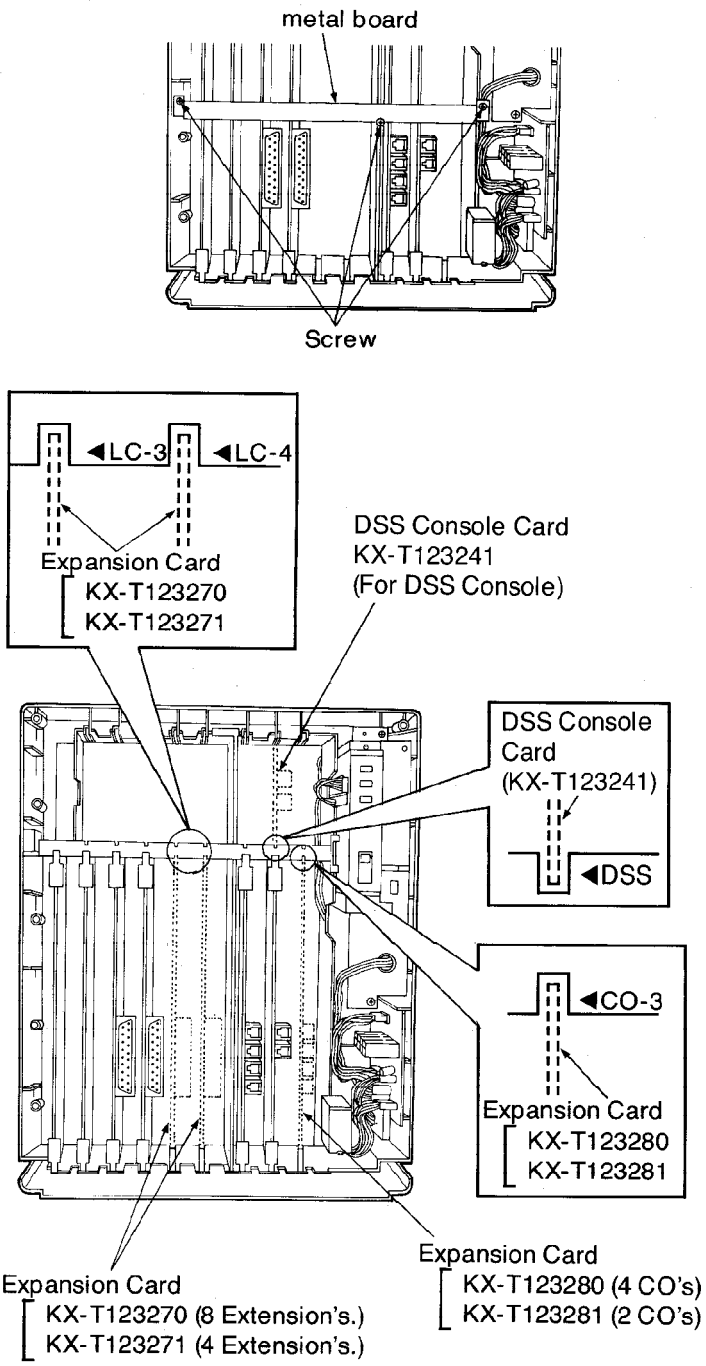


Fig. 12

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Extension Connection (Jack number 17 through 32) option

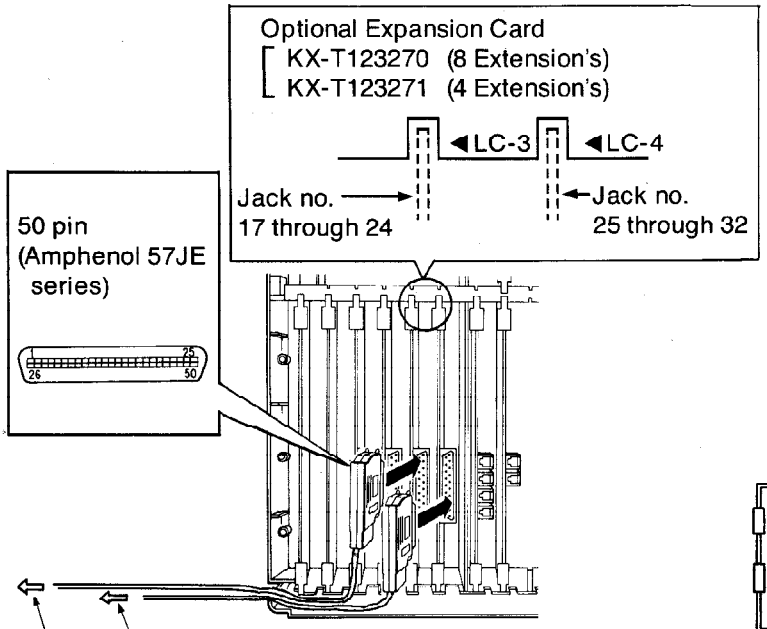

Fig. 13

Central Office Line Connection (CO9 through 12) option

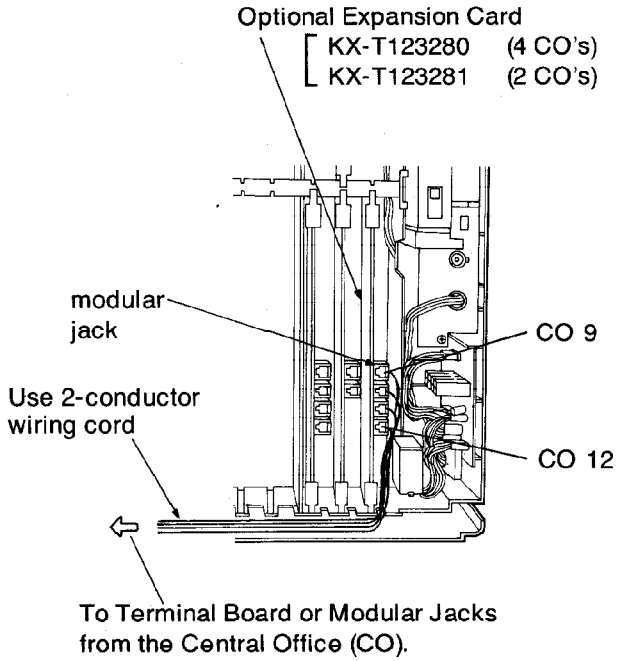

Fig. 14

Optional DSS Console Connection (KX-T123240 / KX-T61640)

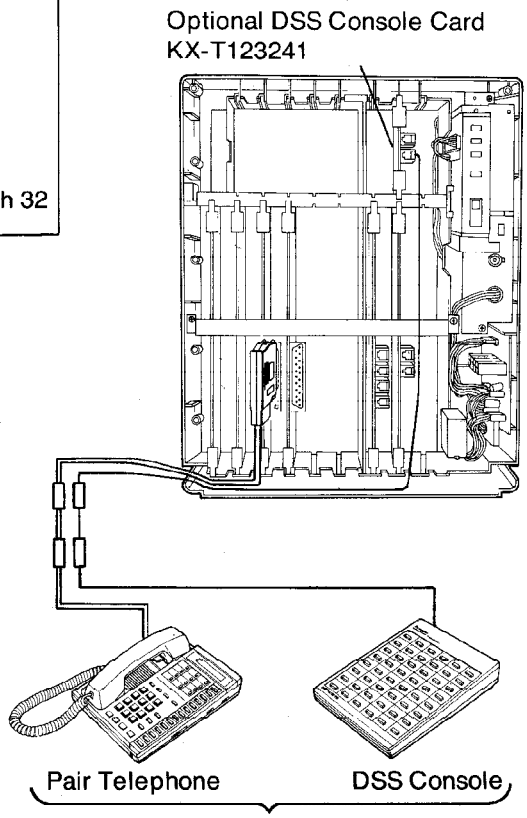

Fig. 15

- The DSS Console (KX-T123240 or KX-T61640) needs a paired Telephone (EMSS Proprietary Telephone) for proper operation, because the DSS console cannot work by itself.
- When using the DSS Console, program must be done.

Battery Connection

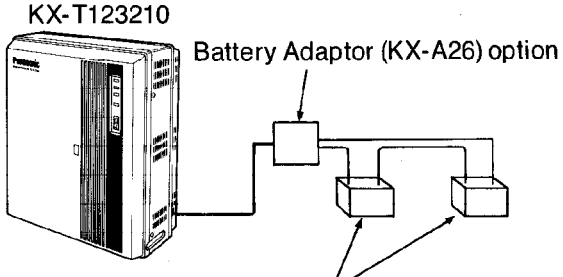

Fig. 16

- Consisting of two 12 VDC (24 VDC)
- 16 amp / hour maximum rating

Optional Doorphone Connection

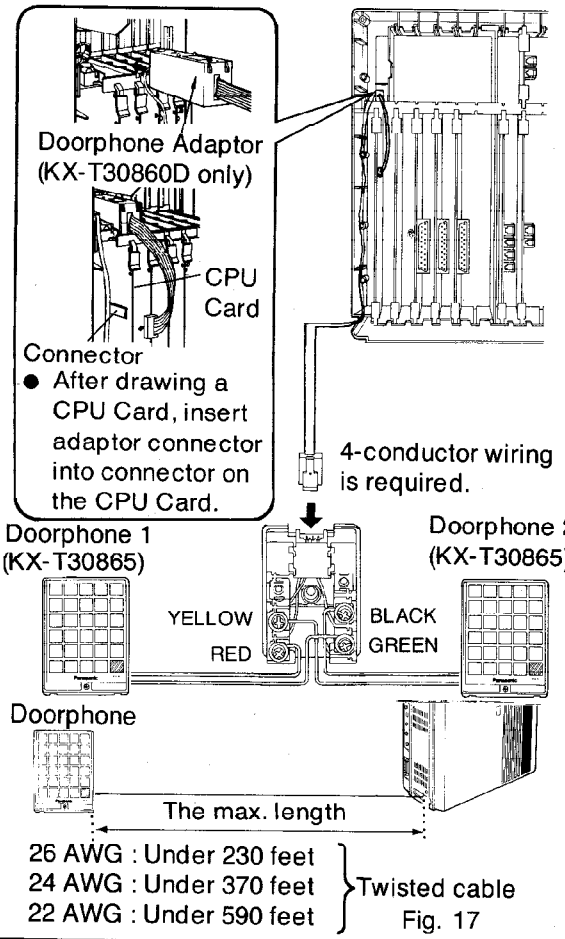

Fig. 17

Paging Equipment

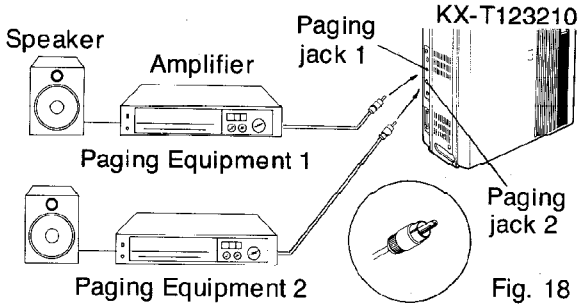

Fig. 18

External Music Source

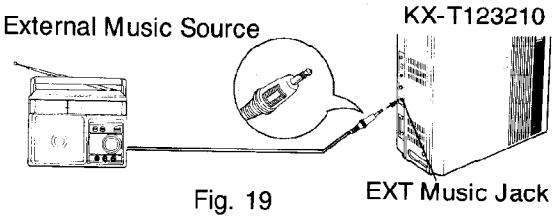

Fig. 19

Printer Connection

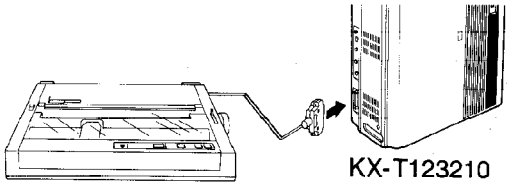

Fig. 20

- Cables must be shielded and the maximum length is 6.5 feet.

Connection Chart:

KX-T123210 RS-232C — Printer RS-232C

Circuit Type (EIA)	Signal Name	Pin No.	Pin No.	Signal Name	Circuit Type (EIA)
AA	FG	1	1	FG	AA
BA	TXD	2	3	RXD	BB
BB	RXD	3	2	TXD	BA
CB	CTS	5			
CC	DSR	4,6	20	DTR	CD
AB	SG	7	7	SG	AB
CD	DTR	20	5	CTS	CB
			6	DSR	CC
			8	DCD	CF

Communication parameters

If the Panasonic printer which is used has a (KX-P11D or KX-P17) board and is connected to the KX-T123210, set the communication parameters the following.

	KX-T123210	KX-P11D		KX-P17	
		DIP Switch	Setting	DIP Switch	Setting
Word length	7bit (default)	SW1-1	ON	SW1-4	ON
Parity	Program to "EVEN"	SW1-2	ON	SW1-5	OFF
		SW1-3	ON	SW1-6	OFF
Baud Rate	1200B (default)	SW1-5 SW1-6 SW1-7 SW1-8	ON OFF OFF OFF	SW1-1 SW1-2 SW1-3	OFF OFF ON
Protocol	XON / XOFF mode only	SW2-8	OFF	SW1-8	ON

PROGRAMMING

To activate this system, the requirements from telephone company and the customer must be programmed once the Power Switch has been turned on.

Programming Instructions

1. At extension connected to jack number 01: All system programming changes (example : system clear, toll restriction, system speed dialing entry···) are done through extension connected to jack number 01.

   ● Extension connected to jack number 01 must always be a Panasonic model, KX-T123230.

2. System Program Switch setting:
   The System Program Switch located on the KX-T123210 must be set to the "PITS" (Proprietary Integrated Telephone System) position while making program changes. After all programming changes are completed, return the program switch to the "SET" position.

3. Overlay:
   This overlay is used for programming the system and the program function names are inscribed on this card.

4. Before system programming, operate the system clear to set to the default data of the program.

   System Clear:
   - Set the System Program Switch of the KX-T123210 to the "PITS" position.

   1. Dial (99).
      "System Clear" will be displayed.
   2. Press the NEXT button.
   3. Repeat pressing the SELECT button until the "Menu: All Para" is displayed.
   4. Press the MEMORY button to clear system.
   5. To return to the initial program mode, press the END button.

   - The following parameters are preset as the default data.
     System parameters
     CO parameters
     Extension parameters
     DSS parameters
     Speed call

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When the System Program Switch on the KX-T123210 is set to the "PITS" position, the operation of the KX-T123230 connected to jack number 01 will change as follows.

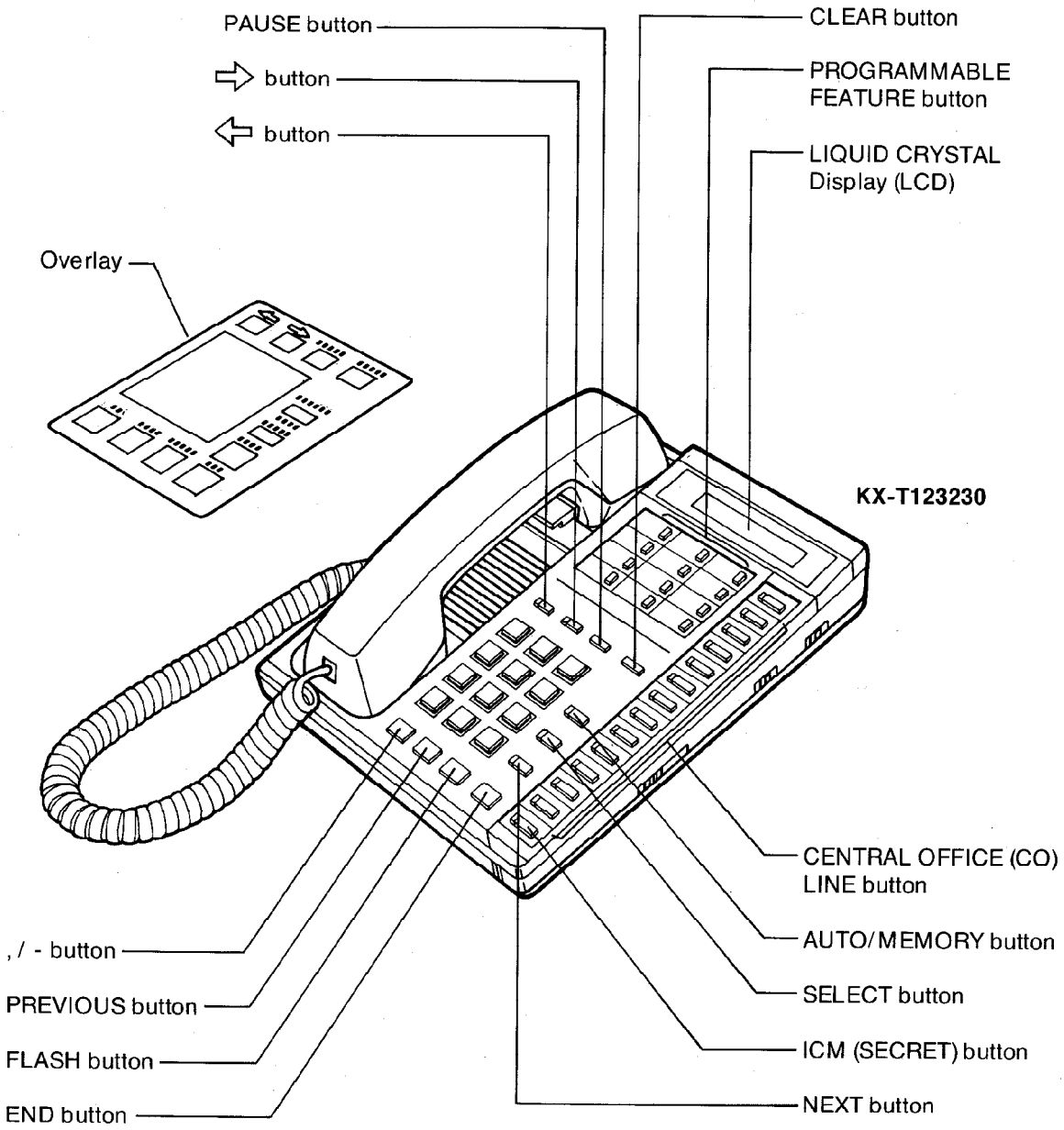

Fig. 21

Example of Programming

1. Turn the Power Switch to ON .
2. Set the System Program Switch to "PITS" position.
   The LCD on the KX-T123230 will show "SYS-PGM NO ?→".
   - Be sure the handset of the extension connected to jack number 01 is in the cradle and the speakerphone button off.
3. To program automatic line access number 9 and the phone number 987-654-3210 into speed access code 00.

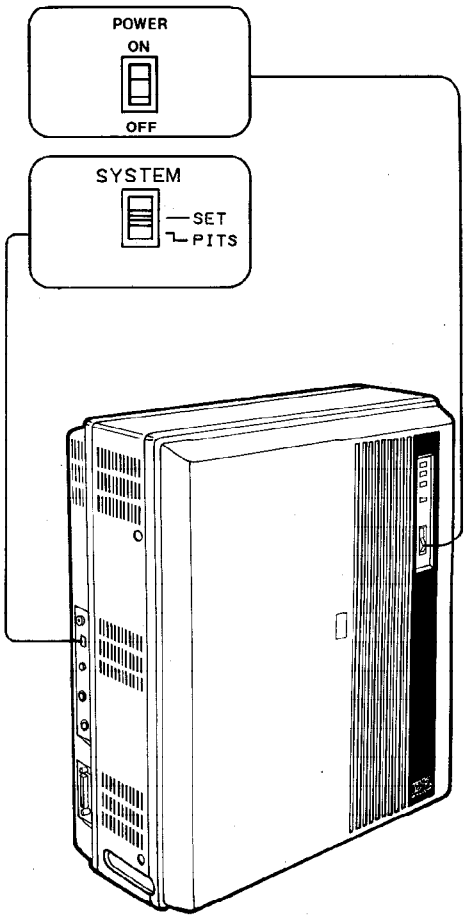

Fig. 22

	KX-T123230 at extension connected to jack number 01. (Extension connected to jack number 01 must be a KX-T123230.)	
1.	Dial (01) or press the Auto button.	Display: Speed Dialing
2.	Press the NEXT button.	Speed NO? →
3.	Dial (00) or press the NEXT button.	● If nothing is stored in access code "00", 00: Not Stored ● If already stored the automatic line access number 9 and the phone number 123-456-7890, 00: 9-123-456-789
4.	① Dial "9". ② Press " – " button. ③ Dial "987". ④ Press " – " button. ⑤ Dial "654". ⑥ Press " – " button. ⑦ Dial "3210".	00: -987-654-3210
5.	Press the MEMORY button.	00: -987-654-3210
6.	● To program the next access code, press the NEXT button. ● To program a desired access code, press the SELECT button and dial speed access code.	
7.	Repeat steps 4 to 6.	
8.	To return to the initial program mode, press the END button.	SYS-PGM NO ?→

4. Return the System Program Switch to "SET" position.
   - To make program change, start from the beginning.

While programming if a mistake is made,

1. Press the "END" button.
2. Start programming procedure from the beginning.

- You will hear a beep after pressing the MEMORY button.
- The MEMORY indicator light will go on when the MEMORY button is pressed, and then the Indicator light will go out when the NEXT or PREV button is pressed.

■ PROGRAMMING TABLE

System Feature

TO SET	PROGRAM ADDRESS	STEPS REQUIRED TO CHANGE PROGRAM	DEFAULT	PAGE: Installation Manual Page FOR DETAILS	PAGE: Installation Manual Page PROGRAM TABLE
Date and Time Setting	00	NEXT → AB → year → SELECT → month → CD → day → SELECT → day of the week → E F → hour → GH → minute → SELECT → AM / PM → MEMORY → END		3-4	
System Speed Dialing Entry	01 or AUTO	NEXT → AB → Speed access code (00 through 99) → CD → SELECT → phone number → MEMORY → END 9 : automatic line access number 8 1 through 8 8 : access number of Trunk Group	Nothing is stored	3-5	7-1
Extension Number Assignment	02	NEXT → NEXT (until the desired jack number appears) → CDE → dial the extension number (100 through 199) → MEMORY → END	101 : jack number 01 102 : jack number 02 ⋮ 131 : jack number 31 132 : jack number 32	3-8	7-3
Operator Assignment	03	NEXT → NEXT (until the desired operator number appears) → AB → dial the jack number which is set operator → MEMORY → END	Nothing is stored	3-9	7-3
Paired Telephone Assignment for DSS Console	04	NEXT → NEXT → AB → jack number paired with console 1 → MEMORY → NEXT → CD → jack number paired with console 2 → MEMORY → END	jack number 01 : console 1 jack number 02 : console 2	3-10	7-3
Automatic CO Hold Using DSS Button	05	NEXT → SELECT → With Transfer / Without Transfer → MEMORY → END	With Transfer	3-11	7-3
Day/Night Service Mode Switching of Service Mode	06	NEXT → SELECT → Manual / Automatic → MEMORY → END	Manual	3-12	7-4
Starting Time	07	NEXT → AB → starting time for day service (hour) → CD → minute → SELECT → AM / PM → MEMORY → NEXT → E F → starting time for night service (hour) → GH → minute → SELECT → AM / PM → MEMORY → END	Day Service : 9:00AM Night Service : 5:00PM	3-13	7-4
Call Hunting Setting	08	NEXT → NEXT (until the desired extension group number appears) → SELECT → Disable / Enable → MEMORY → END	Disable : all 8 extension groups	3-15	7-4
Hunting Type	09	NEXT → NEXT (until the desired extension group number appears) → SELECT → Terminate / Circular → MEMORY → END	Terminate : all 8 extension groups	3-16	7-4

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TO SET	PROGRAM ADDRESS	STEPS REQUIRED TO CHANGE PROGRAM	DEFAULT	PAGE FOR DETAILS	PAGE PROGRAM TABLE
Toll Restriction Area Type Selection	10	NEXT SELECT MEMORY END Type A / Type B / Type C	Type A	3-18	7-4
CO Operator Call-Boundary Class	11	NEXT A MEMORY END dial the boundary class number (1 through 8)	Class 1	3-19	7-4
Toll Restriction of Speed Dialing	12	NEXT SELECT MEMORY END Restriction / No restriction	Restriction	3-20	7-5
Exchange Code Selection	13	NEXT NEXT CDE MEMORY END exchange code with 3 digits until the desired memory code number appears	Nothing is stored	3-21	7-5
Area Code Entry for class 3	14	NEXT NEXT CDE MEMORY END area code with 3 digits until the desired memory code number appears	Nothing is stored	3-22	7-5
Exchange Code Entry for Class 5	15	NEXT NEXT CDE MEMORY END exchange code with 3 digits until the desired memory code number appears	Nothing is stored	3-23	7-5
Exchange Code Entry for Class 7	16	NEXT NEXT CDE MEMORY END exchange code with 3 digits until the desired memory code number appears	Nothing is stored	3-24	7-6

TO SET	PROGRAM ADDRESS	PROGRAMMING	PROGRAM TABLE
Hold Time Reminder	17	Refer to page 3-25	7-6
Hold Recall Time Set	18	Refer to page 3-26	7-6
Transfer Recall Time	19	Refer to page 3-27	7-6
Call Forwarding Starting Time	20	Refer to page 3-28	7-6
Pickup Dial Delay Time	21	Refer to page 3-29	7-6
CO-to-CO Duration Time Limit	22	Refer to page 3-30	7-7
External Paging Access Tone	29	Refer to page 3-41	7-9

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TO SET	PROGRAM ADDRESS	PROGRAMMING	PROGRAM TABLE
SMDR RS-232C Communication Parameters	23	Refer to page 3-32	7-7
SMDR Parameters	24	Refer to page 3-35	7-8
Incoming/ Outgoing call Selection for printing	25	Refer to page 3-36	7-8
Secret Speed dial/ One Touch Dial Printing	26	Refer to page 3-36	7-8
System Data Dump	27	Refer to page 3-37	7-8
Duration Time Count Start Mode	28	Refer to page 3-40	7-9

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Outside Line Feature

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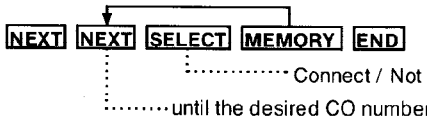
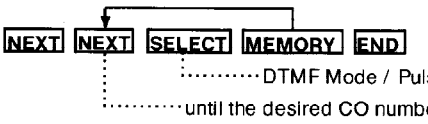
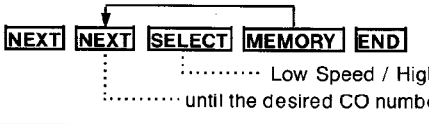
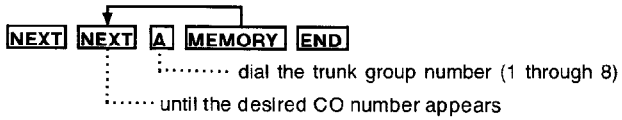
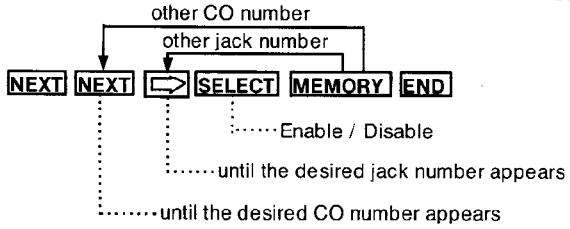
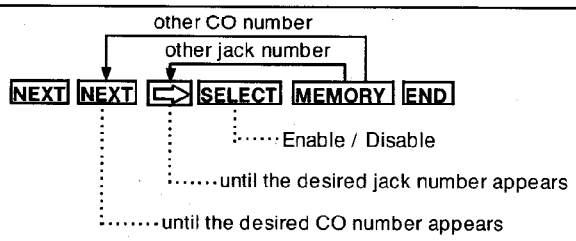
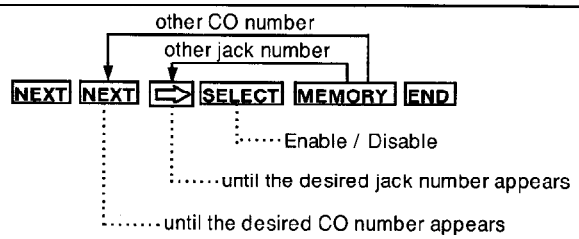
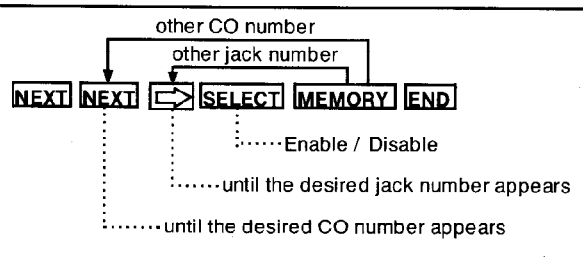
TO SET	PROGRAM ADDRESS	STEPS REQUIRED TO CHANGE PROGRAM	DEFAULT	PAGE FOR DETAILS	PAGE PROGRAM TABLE
CO Connection Assignment	40		Connect : all CO's	3-42	7-9
Dial Mode (DTMF/Pulse) DTMF / Pulse Selection	41		DTMF : all CO's	3-43	7-9
Pulse Speed Selection	42		Low speed : all CO's	3-44	7-9
Trunk Group Assignment	44		Trunk-G1 : CO 1 Trunk-G2 : CO 2 Trunk-G3 : CO 3 Trunk-G4 : CO 4 Trunk-G5 : CO 5 Trunk-G6 : CO 6 Trunk-G7 : CO 7 Trunk-G8 : CO 8, CO 9, CO 10, CO 11, CO 12	3-46	7-10
Flexible Outward Dialing Assignment Day Mode	45		Enable : all jack numbers	3-47	7-11
Night Mode	46		Enable : all jack numbers	3-48	7-12
Flexible Ringing Assignment Day Mode	47		Enable : all jack numbers	3-49	7-13
Night Mode	48		Enable : all jack numbers	3-51	7-14

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TO SET	PROGRAM ADDRESS	STEPS REQUIRED TO CHANGE PROGRAM	DEFAULT	PAGE FOR DETAILS	PAGE PROGRAM TABLE
CO Direct In Line Assignment Day Mode	51	● Selecting "Normal" mode NEXT NEXT SELECT MEMORY END Normal until the desired CO number appears ● Selecting "DIL" mode NEXT NEXT SELECT CD MEMORY END DIL Dial jack number until the desired CO number appears	Normal : all CO's	3-54	7-19
Night Mode	52	● Selecting "Normal" mode NEXT NEXT SELECT MEMORY END Normal until the desired CO number appears ● Selecting "DIL" mode NEXT NEXT SELECT CD MEMORY END DIL Dial jack number until the desired CO number appears	Normal : all CO's	3-57	7-19

TO SET	PROGRAM ADDRESS	PROGRAMMING	PROGRAM TABLE
Host PBX Access Codes Assignment	43	Refer to page 3-45	7-10
Delayed Ringing Assignment Day Mode	49	Refer to page 3-52	7-15 7-16
Night Mode	50	Refer to page 3-53	7-17 7-18

TO SET	PROGRAM ADDRESS	PROGRAMMING	PROGRAM TABLE
Pause Time Assignment	53	Refer to page 3-59	7-20
Hookswitch Flash Timing	54	Refer to page 3-60	7-20
Calling Party Control (CPC) Signal	55	Refer to page 3-61	7-20
Disconnect Time	56	Refer to page 3-62	7-20

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Extension Feature

TO SET	PROGRAM ADDRESS	STEPS REQUIRED TO CHANGE PROGRAM	DEFAULT	PAGE FOR DETAILS	PAGE PROGRAM TABLE
Extension Group Assignment	60	NEXT NEXT A MEMORY END dial the extension group number (1 through 8) until the desired jack number appears	EXT GRP-1 : all jack numbers	3-63	7-21
Call Transfer To Outside Line	65	NEXT NEXT SELECT MEMORY END Enable / Disable until the desired jack number appears	Disable : all jack numbers	3-71	7-23

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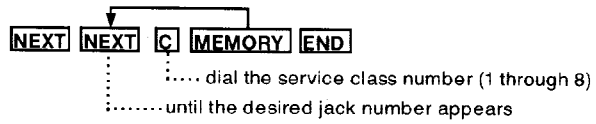
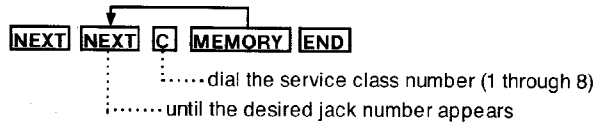
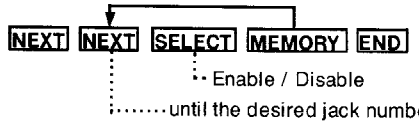
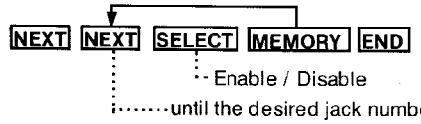
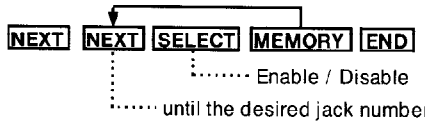
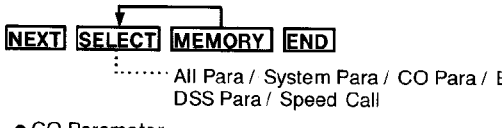
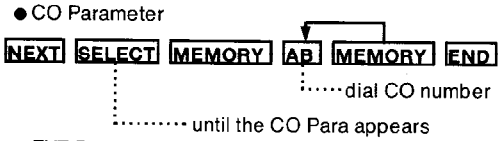
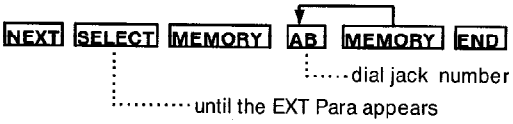
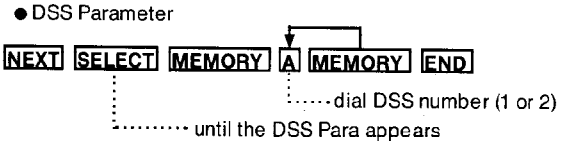
Installation Manual Page

TO SET	PROGRAM ADDRESS	STEPS REQUIRED TO CHANGE PROGRAM	DEFAULT	PAGE FOR DETAILS	PAGE PROGRAM TABLE
Service Class Assignment of Toll Restriction Day Mode	61		Class 1 : all jack numbers	3-64	7-21
Night Mode	62		Class 1 : all jack numbers	3-66	7-22
Call Forwarding To Outside Line	66		Disable : all jack numbers	3-72	7-23
Excecutive Override	67		Disable : all jack numbers	3-73	7-23
Do not Disturb Override	68		Disable : all jack numbers	3-74	7-24

TO SET	PROGRAM ADDRESS	PROGRAMMING	PROGRAM TABLE
Extension Name	63	Refer to page 3-68	7-1
Account Code Input Mode	64	Refer to page 3-70	7-22

TO SET	PROGRAM ADDRESS	PROGRAMMING	PROGRAM TABLE
Ringing Assignment from Doorphone Day Mode	70	Refer to page 3-75	7-24
Night Mode	71	Refer to page 3-76	7-25

TO SET	PROGRAM ADDRESS	STEPS REQUIRED TO CHANGE PROGRAM	DEFAULT	PAGE FOR DETAILS	PAGE PROGRAM TABLE
System Data Clear	99	● All Parameters ● System Parameter ● Speed Call  ● CO Parameter  ● EXT Parameter  ● DSS Parameter 	All Parameters	3-78	

FOR SERVICE TECHNICIANS

ICs and LSIs are vulnerable to static electricity.
When repairing, the following precautions will help prevent recurring malfunctions.
- Cover plastic parts boxes with aluminum foil.
- Ground soldering irons.
- Use a conductive mat on worktable.
- Do not grasp IC or LSI pins with bare fingers.

DISASSEMBLY INSTRUCTIONS

1. HOW TO REMOVE THE FRONT CABINET

1) Remove the four screws (A).
2) Remove the front cabinet.

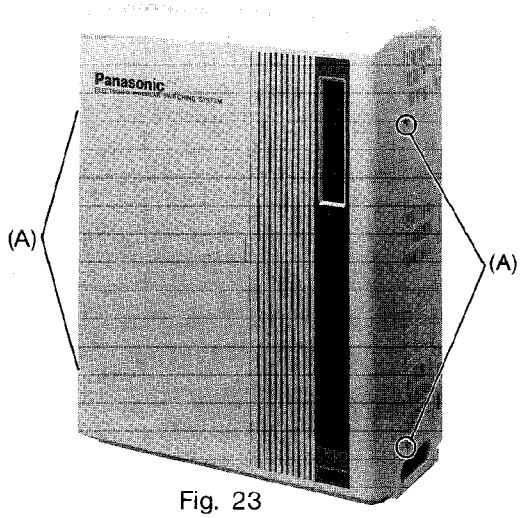


Fig. 23

2. HOW TO REMOVE THE EACH BOARDS

1) Remove the three screws (B).
2) Remove the angle.
3) Remove the board.
4) When attach the board, be sure lock the board.

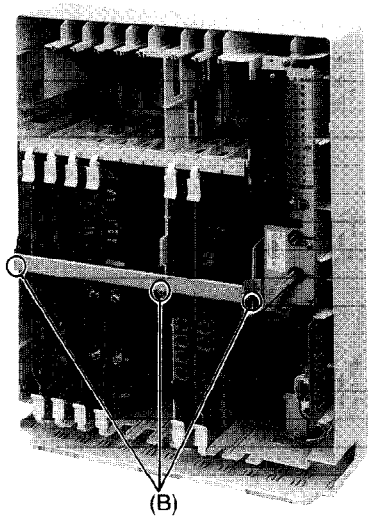


Fig. 24

3. HOW TO REMOVE THE MAIN BOARD

1) Remove the nine screws (C).
2) Remove the rear cover.
3) Remove the fourteen screws (D).
4) Pull out the five connectors of power board and power unit. (Refer to Fig. 27)

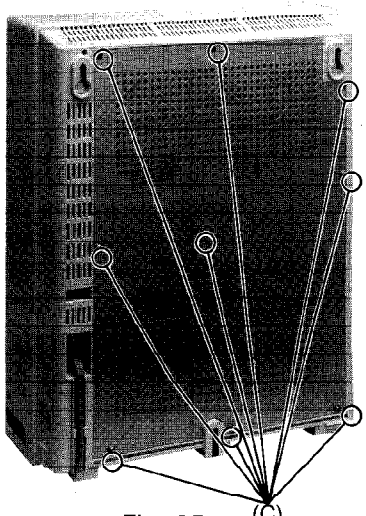


Fig. 25

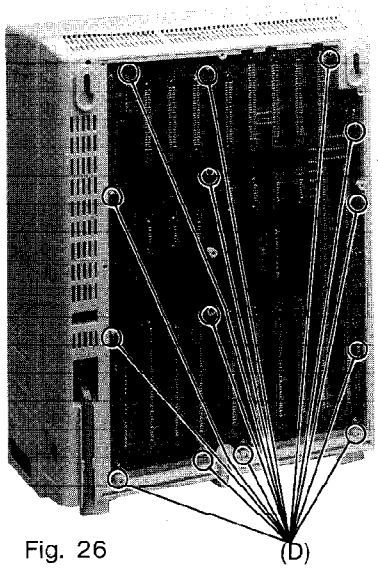


Fig. 26

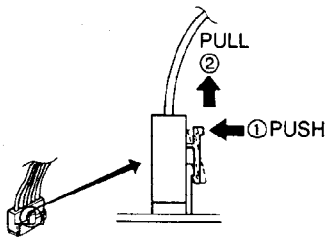


Fig. 27

4. HOW TO REMOVE THE POWER BOARD

1) Pull out the five connectors. (Refer to Fig.27)
2) Remove the power board.

5. HOW TO DISASSEMBLY THE POWER UNIT

1) Remove the two screws (E).
2) Pull out the two connectors.
3) Remove the power unit.
4) Remove the twelve screws (F).
5) Remove the three screws (G).
6) Remove the cover.
7) Remove the seven screws (H).
8) Remove the board.

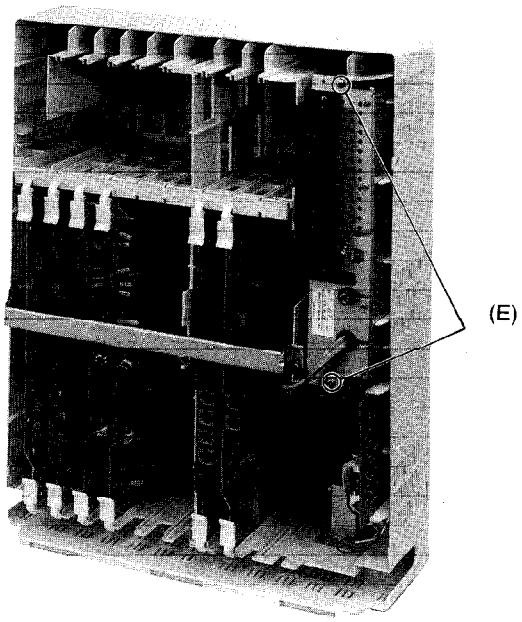


Fig. 28

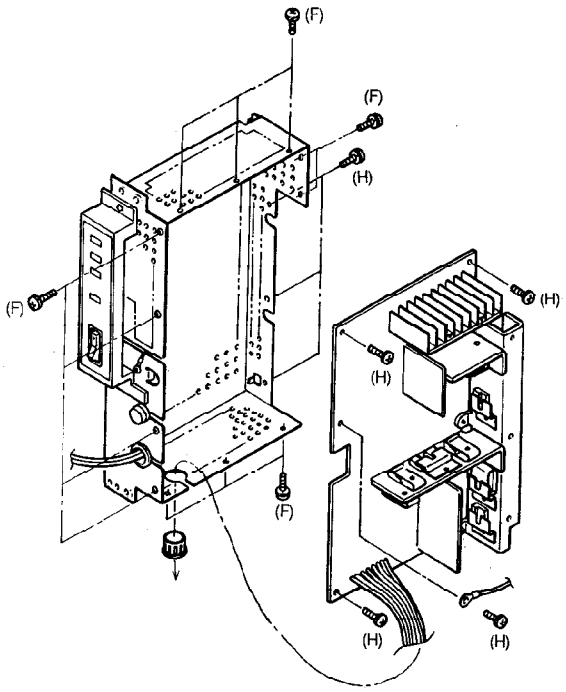
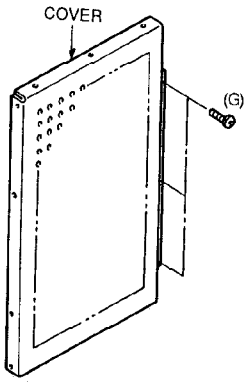


Fig. 29



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IC I/O DATA

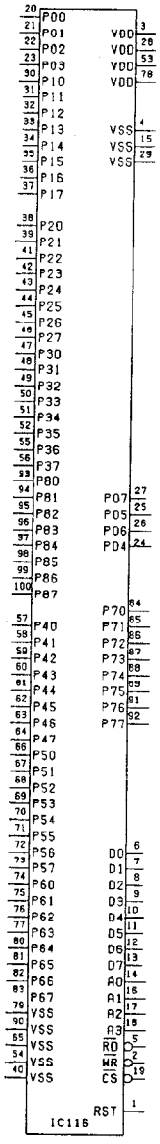
IC116

Pin No.	Port	Signal Name	I/O	Initialize	Active Status	Remarks
20	P00	DAY	O	*1	H	Day Mode LED
21	P01	NIGHT	O	*1	H	Night Mode LED
22	P02	HALT	O	H	L	DISA CPU HALT
23	P03	RESET	O	H	L	CPR Reset : Watch Dog Control
24	P04	INT	O	L	L	350, 440, 620 Hz Tone Send, CPU Start/Stop Control
25	P05	STOP	O	H	L	CPR HALT: Momentary Power Failures Response
26	P06	RSDOWN	O	H	L	RS-232C Driver Power Down Control
27	P07	-----	---	---	---	Not Used
30	P10	CNMD	I	---	L	Optional Modem Card Existence Detection
31	P11	CNDISA	I	---	L	Optional DISA Card Existence Detection
32	P12	-----	---	---	---	Not Used
33	P13	-----	---	---	---	Not Used
34	P14	-----	---	---	---	Not Used
35	P15	-----	---	---	---	Not Used
36	P16	-----	---	---	---	Not Used
37	P17	CNDIAG	I	---	L	Optional Diagnosis Card Existence Detection
38	P20	-----	---	---	---	Not Used
39	P21	-----	---	---	---	Not Used
41	P22	-----	---	---	---	Not Used
42	P23	-----	---	---	---	Not Used
43	P24	-----	---	---	---	Not Used
44	P25	-----	---	---	---	Not Used
45	P26	-----	---	---	---	Not Used
46	P27	CNXP	I	---	L	Cross Point Card Existence Detection
47	P30	PDRLY1	O	L	H	Extension Card 1 Extension 1 Power Failure Relay
48	P31	PDRLY2	O	L	H	Extension Card 1 Extension 2 Power Failure Relay
49	P32	PDRLY3	O	L	H	Extension Card 2 Extension 9 Power Failure Relay
50	P33	PDRLY4	O	L	H	Extension Card 2 Extension 10 Power Failure Relay
51	P34	PDRLY5	O	L	H	Extension Card 3 Extension 17 Power Failure Relay
52	P35	PDRLY6	O	L	H	Extension Card 3 Extension 18 Power Failure Relay
55	P36	-----	---	---	---	Not Used
56	P37	-----	---	---	---	Not Used
57	P40	POW 1	O	H	L	DTMF G Control
58	P41	POW 2	O	H	L	DTMF G Control
59	P42	POW 3	O	H	L	DTMF G Control
60	P43	POW 4	O	H	L	DTMF G Control
61	P44	COL 1	O	H	L	DTMF G Control
62	P45	COL 2	O	H	L	DTMF G Control
63	P46	COL 3	O	H	L	DTMF G Control
64	P47	COL 4	O	H	L	DTMF G Control
66	P50	STD 1	I	---	H	DTMF R1 Signal Receive Detection
67	P51	STD 2	I	---	H	DTMF R2 Signal Receive Detection
68	P52	STD 3	I	---	H	DTMF R3 Signal Receive Detection
69	P53	-----	---	---	---	Not Used
70	P54	SS	I	---	L	RS-232C
71	P55	DCD	I	---	L	RS-232C
72	P56	PDSIG	I	---	L	AC Power Down
73	P57	DROP2	I	---	L	Optional Doorphone Card Existence Detection
74	P60	CNCT1	I	---	H	Doorphone 1 Connect Detection
75	P61	CNCT2	I	---	H	Doorphone 2 Connect Detection
76	P62	DHK1	I	---	H	Doorphone 1 Switch Detection
77	P63	DHK2	I	---	H	Doorphone 2 Switch Detection
80	P64	BUSY1	O	H	L	Doorphone 1 Power Supply Control
81	P65	BUST2	O	H	L	Doorphone 2 Power Supply Control
82	P66	20 Hz	O	H	20Hz	Extension Bell Signal
83	P67	SCA	O	L	L	RS-232C

*1: Be based on operate condition.

IC116

Pin No.	Port	Signal Name	I/O	Initialize	Active Status	Remarks
84	P70	-----	---	---	---	Not Used
85	P71	-----	---	---	---	Not Used
86	P72	-----	---	---	---	Not Used
87	P73	-----	---	---	---	Not Used
88	P74	TEST1	I	---	L	Test Input 1 (Not Used)
89	P75	TEST2	I	---	L	Test Input 2 (Not Used)
91	P76	PRG1	I	---	L	PITS Program Mode
92	P77	PRG2	I	---	L	EIA Program Mode
93	P80	-----	---	---	---	Not Used
94	P81	-----	---	---	---	Not Used
95	P82	-----	---	---	---	Not Used
96	P83	-----	---	---	---	Not Used
97	P84	PDRLY7	O	L	H	Extension Card 4 Extension 25, 26 Power Failure Relay
98	P85	DRLY1	O	L	H	Diagnosis Card Relay 1
99	P86	DRLY2	O	L	H	Diagnosis Card Relay 2
100	P87	DRLY3	O	L	H	Diagnosis Card Relay 3



IC204

Pin No.	Port	Signal Name	I/O	Initialize	Active Status	Remarks	
4	P00	CF1	O	H	L	Conference Call Switch	COL1
5	P01	MT1	O	H	H	Mute Switch	COL1
6	P02	DL1	O	L	H	Dial Relay	COL1
7	P03	DS1	O	L	H	Spark Erase Relay	COL1
8	P04	SH1	O	L	L	Shunt Switch	COL1
9	P05	BR1	O	H	H	Oscillate Prevent Switch	COL1
10	P06	DIG1	O	L	H	Diagnosis Relay	COL1
11	P07	BELL1	I	---	*1	Bell/CPC 400 msec Input	COL1
13	P10	CF2	O	H	L	Conference Call Switch	COL2
14	P11	MT2	O	H	H	Mute Switch	COL2
15	P12	DL2	O	L	H	Dial Relay	COL2
16	P13	DS2	O	L	H	Spark Erase Relay	COL2
17	P14	SH2	O	L	H	Shunt Switch	COL2
18	P15	BR2	O	H	H	Oscillate Prevent Switch	COL2
19	P16	DIG2	O	L	H	Diagnosis Relay	COL2
20	P17	BELL2	I	---	*1	Bell/CPC 400 msec Input	COL2
21	P20	CF3	O	H	L	Conference Call Switch	COL3
24	P21	MT3	O	H	H	Mute Switch	COL3
25	P22	DL3	O	L	H	Dial Relay	COL3
26	P23	DS3	O	L	H	Spark Erase Relay	COL3
27	P24	SH3	O	L	L	Shunt Switch	COL3
28	P25	BR3	O	H	H	Oscillate Prevent Switch	COL3
29	P26	DIG3	O	L	H	Diagnosis Relay	COL3
30	P27	BELL3	I	---	*1	Bell/CPC 400 msec Input	COL3
31	P60	CODE1	I	---	*2	Card Classification Code 1	
32	P61	CODE2	I	---	*2	Card Classification Code 2	
34	P62	CODE3	I	---	*2	Card Classification Code 3	
35	P63	CODE4	I	---	*2	Card Classification Code 4	
36	P30	CF4	O	H	L	Conference Call Switch	COL4
37	P31	MT4	O	H	H	Mute Switch	COL4
38	P32	DL4	O	L	H	Dial Relay	COL4
39	P33	DS4	O	L	H	Spark Erase Relay	COL4
40	P34	SH4	O	L	L	Shunt Switch	COL4
41	P35	BR4	O	H	H	Oscillate Prevent Switch	COL4
44	P36	DIG4	O	L	H	Diagnosis Relay	COL4
45	P37	BELL4	I	---	*1	Bell/CPC 400 msec Input	COL4
46	P40	CPC01	I	---	L	CPC 6.5 msec Detection COL1	
47	P41	CPC2	I	---	L	CPC 6.5 msec Detection COL2	
48	P42	CPC3	I	---	L	CPC 6.5 msec Detection COL3	
49	P43	CPC4	I	---	L	CPC 6.5 msec Detection COL4	
50	P44	-----	---	---	---	Not Used	
51	P45	-----	---	---	---	Not Used	
52	P46	-----	---	---	---	Not Used	
53	P47	-----	---	---	---	Not Used	
55	P50	-----	---	---	---	Not Used	
56	P51	-----	---	---	---	Not Used	
57	P52	-----	---	---	---	Not Used	
58	P53	-----	---	---	---	Not Used	
59	P54	-----	---	---	---	Not Used	
60	P55	-----	---	---	---	Not Used	
61	P56	-----	---	---	---	Not Used	
64	P57	-----	---	---	---	Not Used	

*1: BELL Active...L CPC Active...H *2: Be based on classification code.

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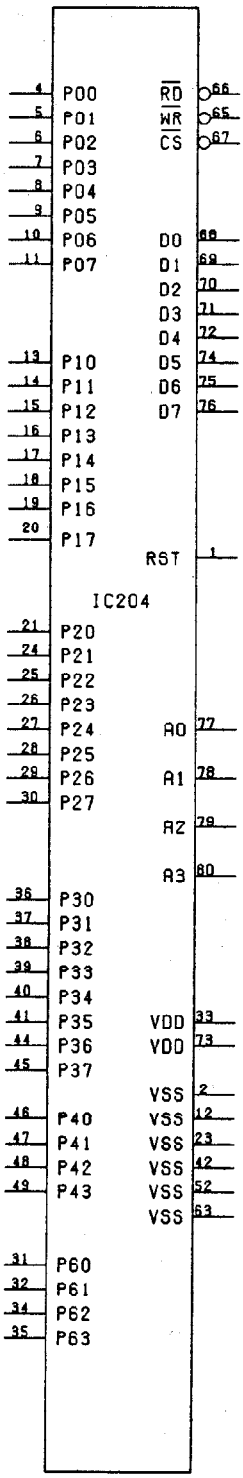
IC204
4 P00
5 P01
6 P02
7 P03
8 P04
9 P05
10 P06
11 P07
13 P10
14 P11
15 P12
16 P13
17 P14
18 P15
19 P16
20 P17
21 P20
24 P21
25 P22
26 P23
27 P24
28 P25
29 P26
30 P27
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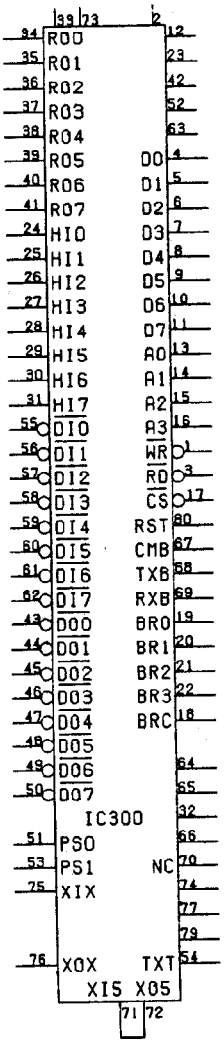
37 P31
38 P32
39 P33
40 P34
41 P35
44 P36
45 P37
46 P40
47 P41
48 P42
49 P43
31 P60
32 P61
34 P62
35 P63
RD 66
WR 65
CS 67
D0 68
D1 69
D2 70
D3 71
D4 72
D5 74
D6 75
D7 76
RST 1
A0 77
A1 78
A2 79
A3 80
VDD 33
VDD 73
VSS 2
VSS 12
VSS 23
VSS 42
VSS 52
VSS 53

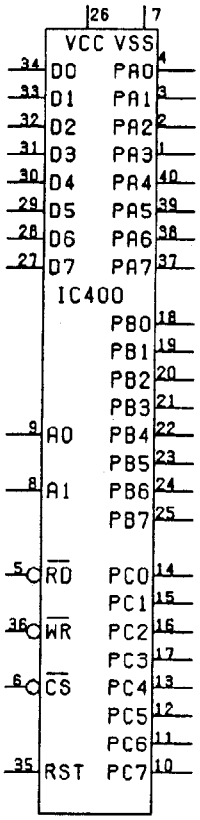
IC300

Pin No.	Port	Signal Name	I/O	Initialize	Active Status	Remarks
24	HI0	HOOK1	I	---	L	HOOK Detection Extension 1
25	HI1	HOOK2	I	---	L	HOOK Detection Extension 2
26	HI2	HOOK3	I	---	L	HOOK Detection Extension 3
27	HI3	HOOK4	I	---	L	HOOK Detection Extension 4
28	HI4	HOOK5	I	---	L	HOOK Detection Extension 5
29	HI5	HOOK6	I	---	L	HOOK Detection Extension 6
30	HI6	HOOK7	I	---	L	HOOK Detection Extension 7
31	HI7	HOOK8	I	---	L	HOOK Detection Extension 8
34	R00	RING1	O	L	H	Bell Relay Extension 1
35	R01	RING2	O	L	H	Bell Relay Extension 2
36	R02	RING3	O	L	H	Bell Relay Extension 3
37	R03	RING4	O	L	H	Bell Relay Extension 4
38	R04	RING5	O	L	H	Bell Relay Extension 5
39	R05	RING6	O	L	H	Bell Relay Extension 6
40	R06	RING7	O	L	H	Bell Relay Extension 7
41	R07	RING8	O	L	H	Bell Relay Extension 8



IC400

Pin No.	Port	Signal Name	I/O	Initialize	Active Status	Remarks
1	PA3	STB3	O	L	H	Cross Point STB Terminal 3
2	PA2	STB2	O	L	H	Cross Point STB Terminal 2
3	PA1	STB1	O	L	H	Cross Point STB Terminal 1
4	PA0	STB0	O	L	H	Cross Point STB Terminal 0
10	PC7	-----	---	---	---	Not Used
11	PC6	-----	---	---	---	Not Used
12	PC5	-----	---	---	---	Not Used
13	PC4	E	O	L	H	Cross Point Address Terminal E
14	PC0	A	O	L	H	Cross Point Address Terminal A
15	PC1	B	O	L	H	Cross Point Address Terminal B
16	PC2	C	O	L	H	Cross Point Address Terminal C
17	PC3	D	O	L	H	Cross Point Address Terminal D
18	PB0	XD0	O	L	H	Cross Point Data Terminal 0
19	PB1	XD1	O	L	H	Cross Point Data Terminal 1
20	PB2	XD2	O	L	H	Cross Point Data Terminal 2
21	PB3	XD3	O	L	H	Cross Point Data Terminal 3
22	PB4	XD4	O	L	H	Cross Point Data Terminal 4
23	PB5	XD5	O	L	H	Cross Point Data Terminal 5
24	PB6	XD6	O	L	H	Cross Point Data Terminal 6
25	PB7	XD7	O	L	H	Cross Point Data Terminal 7
37	PA7	STB7	O	L	H	Cross Point STB Terminal 7
38	PA6	STB6	O	L	H	Cross Point STB Terminal 6
39	PA5	STB5	O	L	H	Cross Point STB Terminal 5
40	PA4	STB4	O	L	H	Cross Point STB Terminal 4



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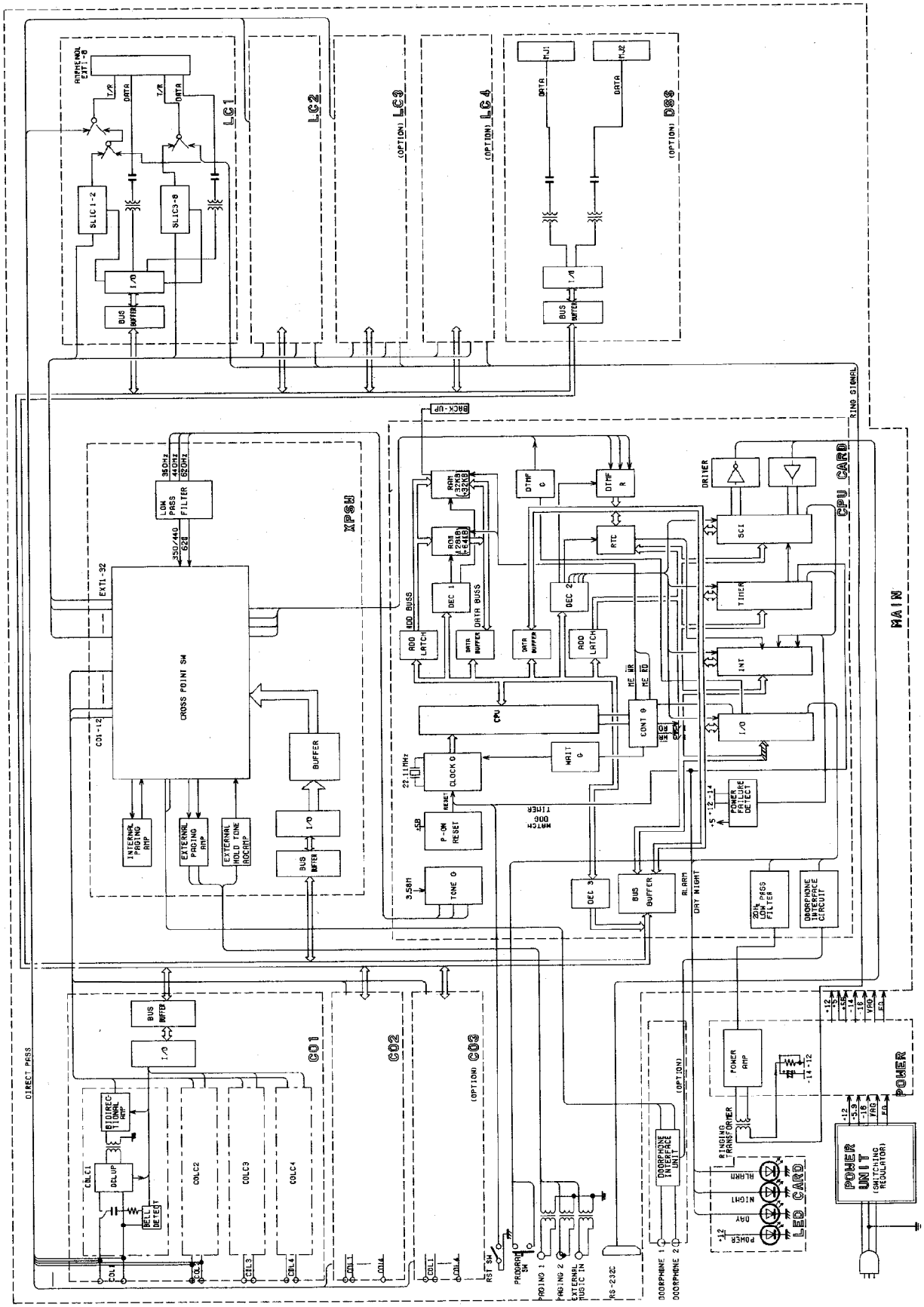
BLOCK DIAGRAM



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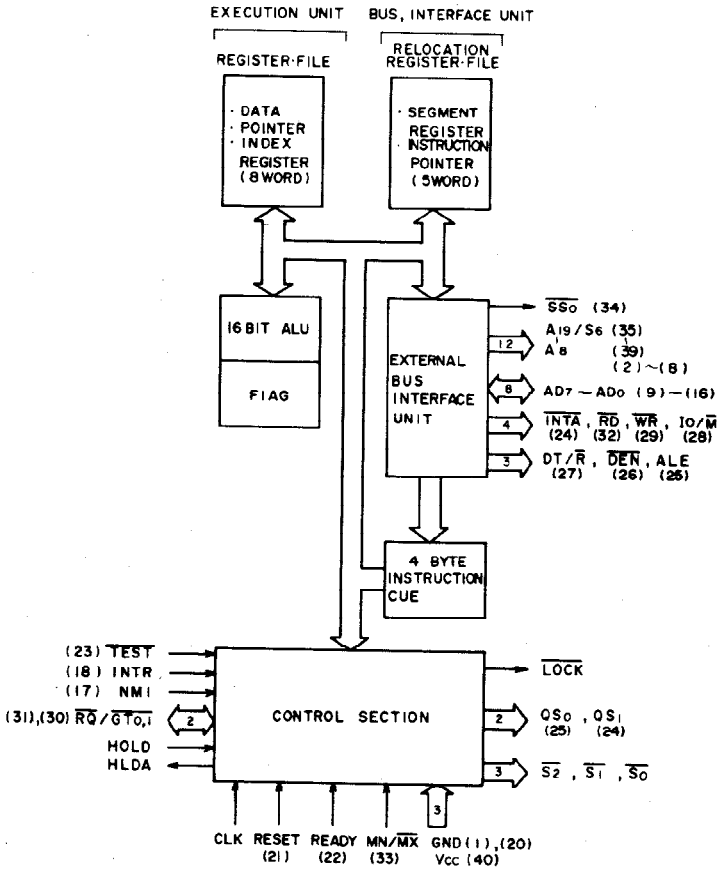
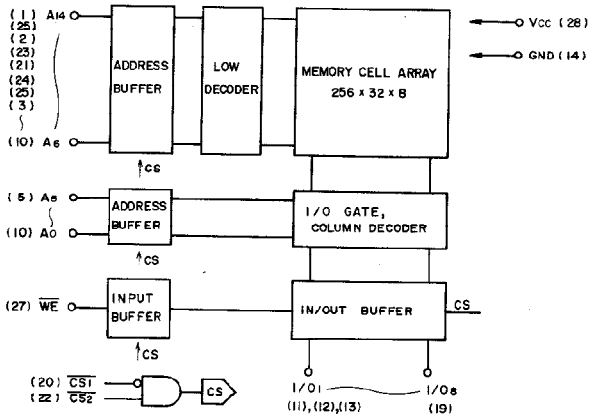
IC BLOCK DIAGRAM

IC100 PQVIMSM80C88



IC102 PQVIPD83257C



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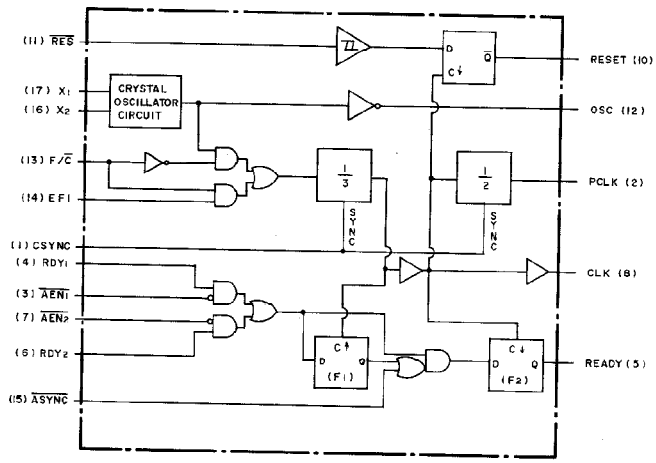

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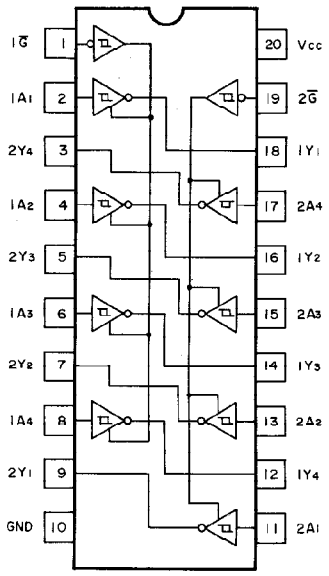

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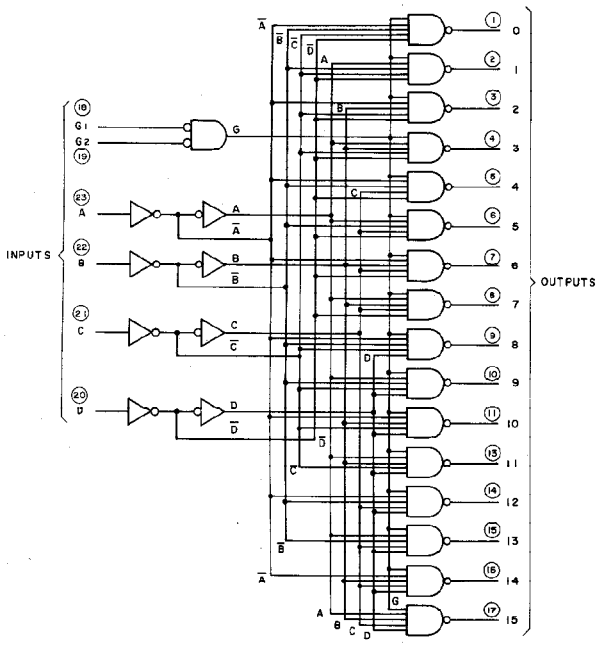

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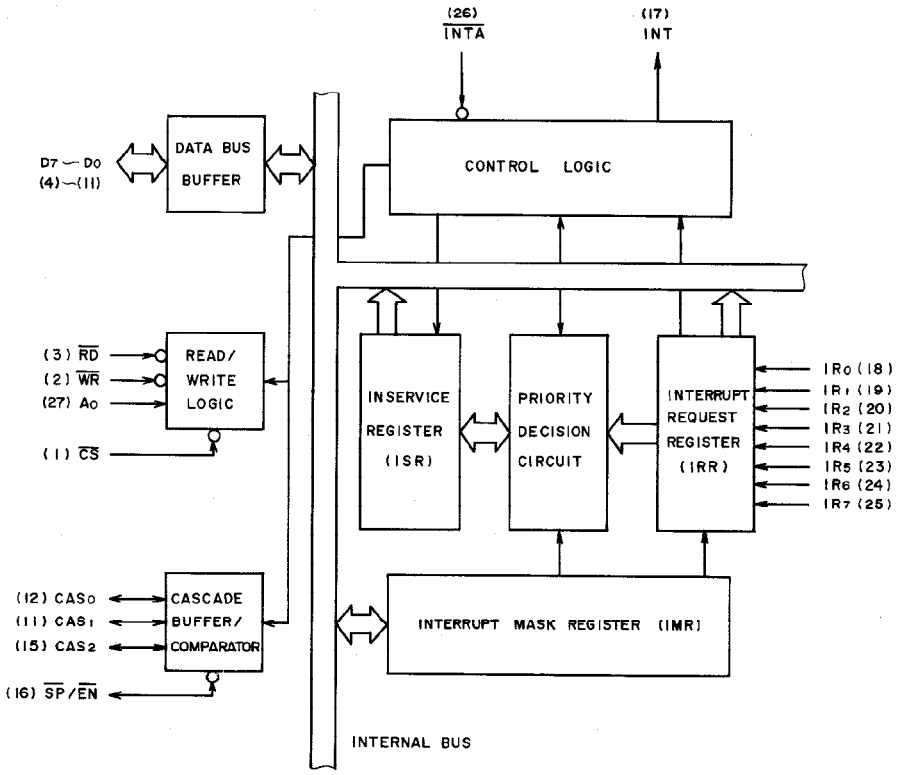

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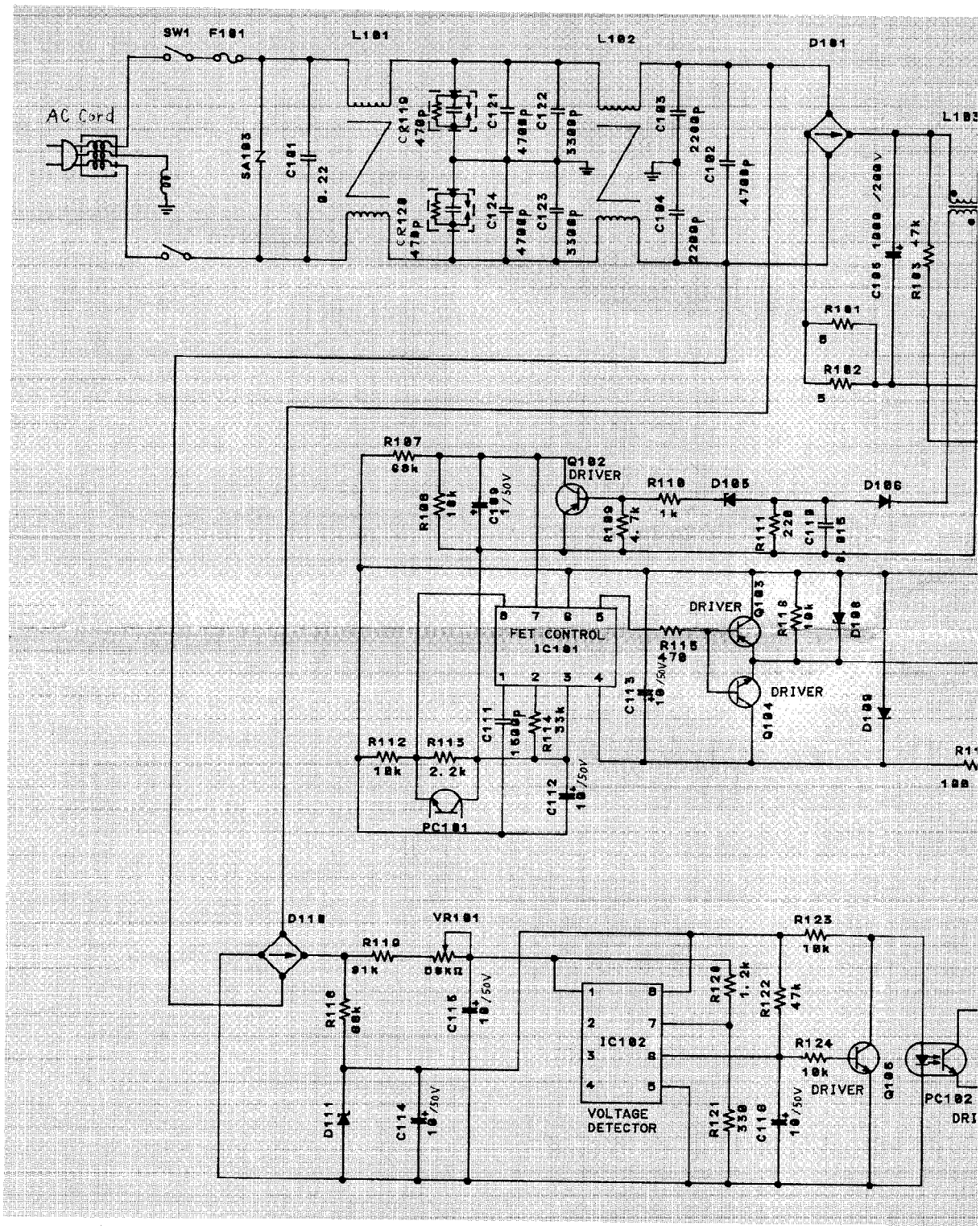
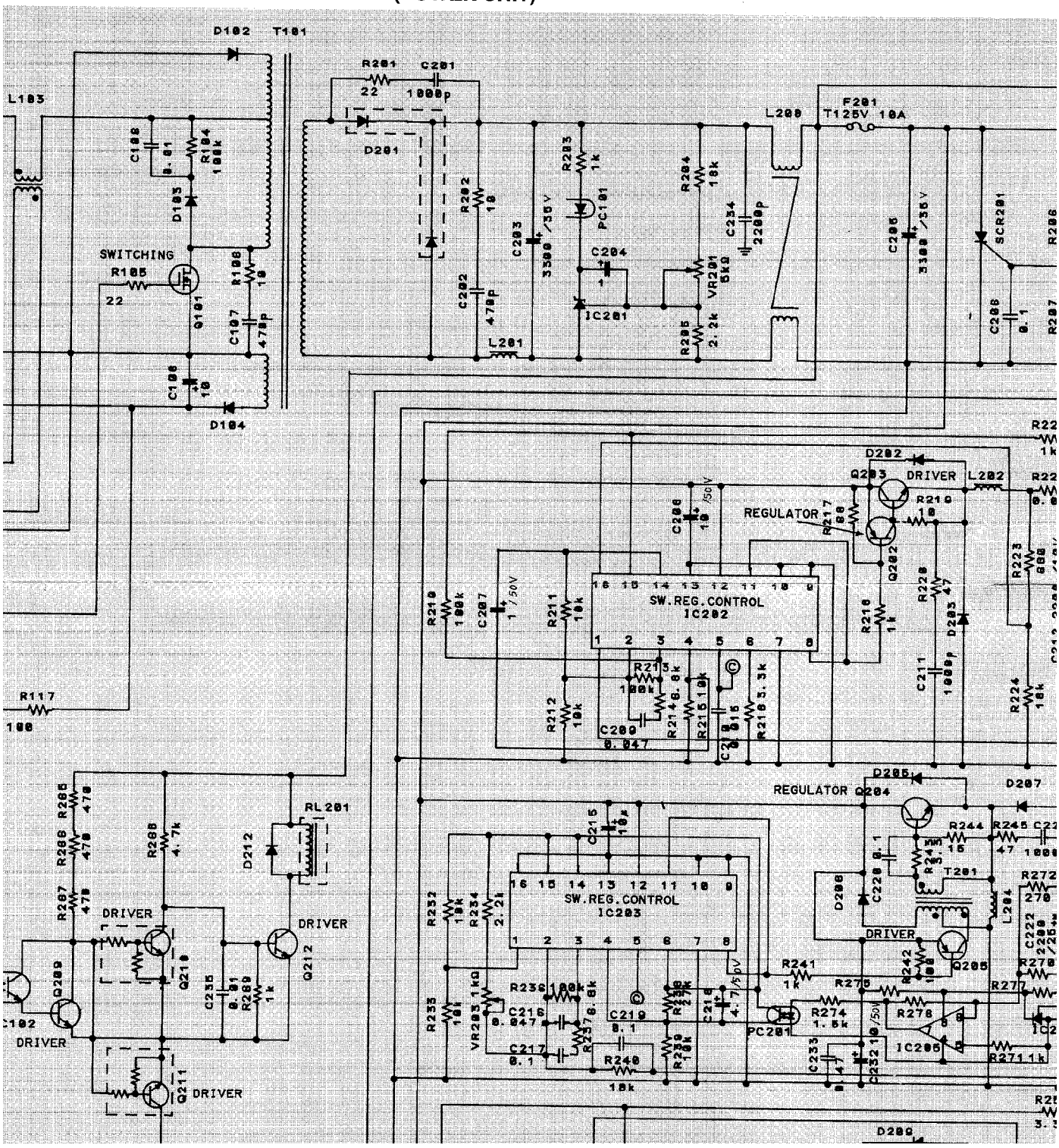

SW1
F101
L101
L102
D101
AC Cord
SA103
C101
0.22
CR119
470p
CR120
470p
C121
4700p
C122
3300p
C124
4700p
C123
3300p
C103
2200p
C104
2200p
C102
4700p
C105
1000 /200V
R103
47k
R101
5
R102
5
R107
68k
R108
10k
C109
1 /50V
Q102
DRIVER
R110
1k
D105
D106
R109
4.7k
R111
220
C110
0.015
FET CONTROL
IC101
9 7 6 5
1 2 3 4
Q103
DRIVER
R116
10k
D108
R115
75
C113
10 /50V
Q104
DRIVER
D109
C111
1500p
R114
33k
R112
18k
R113
2.2k
C112
10 /50V
PC101
D110
VR101
R119
91k
50kΩ
R118
68k
C115
10 /50V
D111
C114
10 /50V
IC102
VOLTAGE
DETECTOR
R123
10k
R120
1.2k
R122
47k
R124
10k
Q105
DRIVER
PC102
R121
330
C116
10 /50V

SCHEMATIC DIAGRAM

7 | 8 | 9 | 10 | 11 | 12 | 13

(POWER UNIT)



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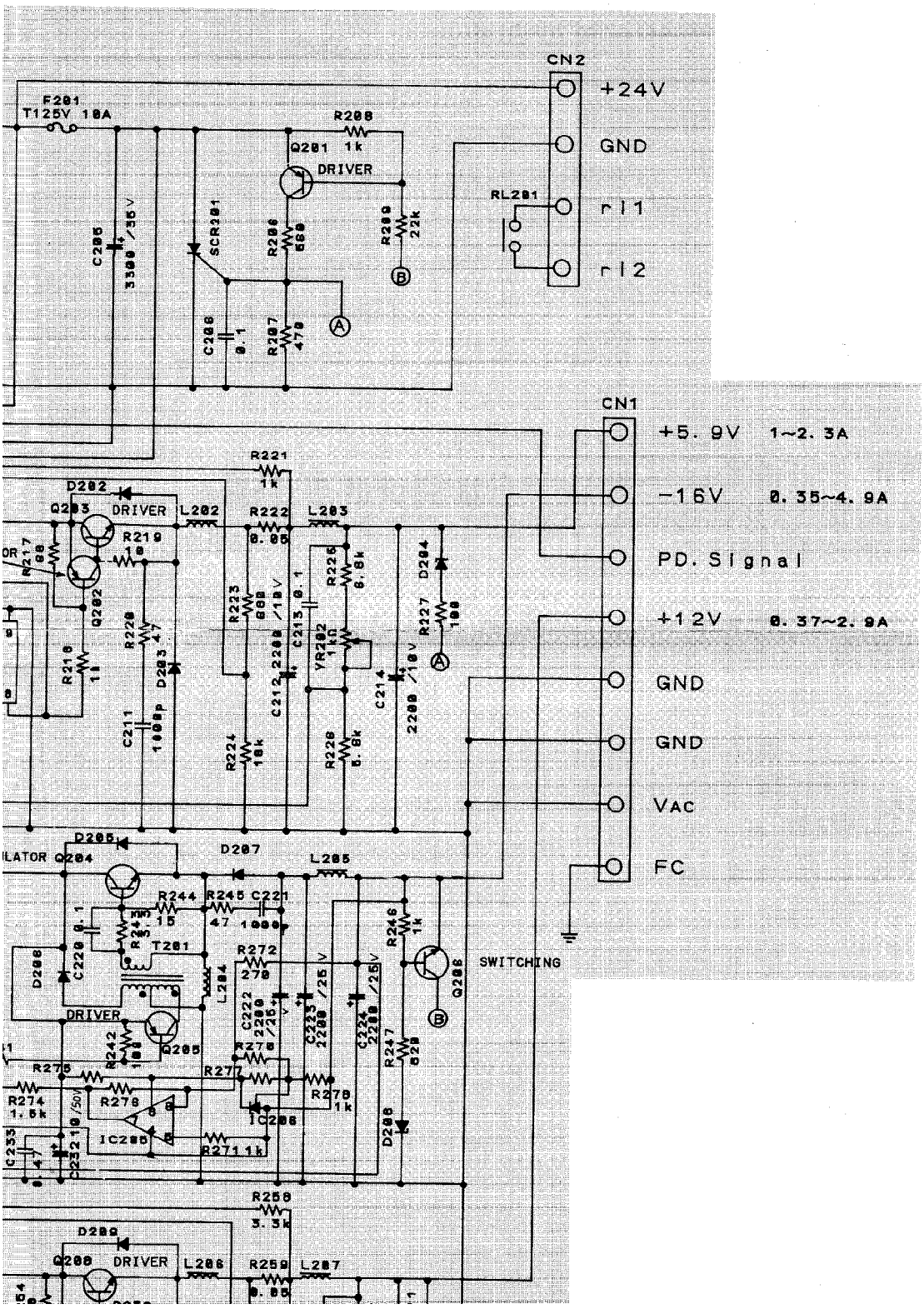
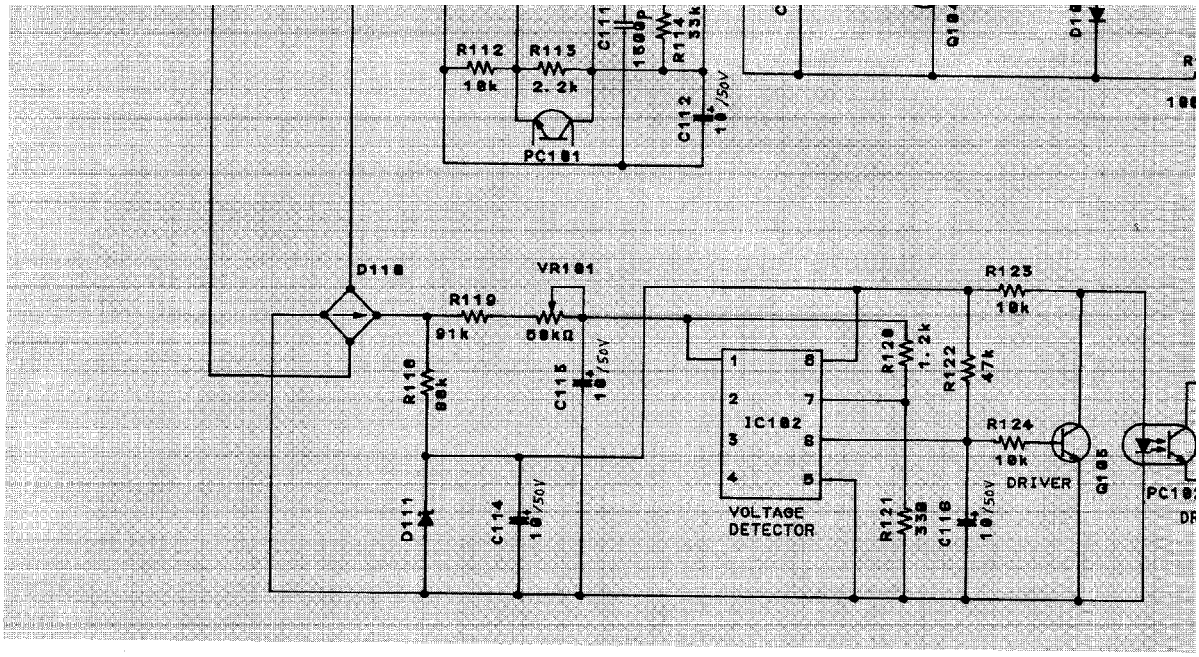
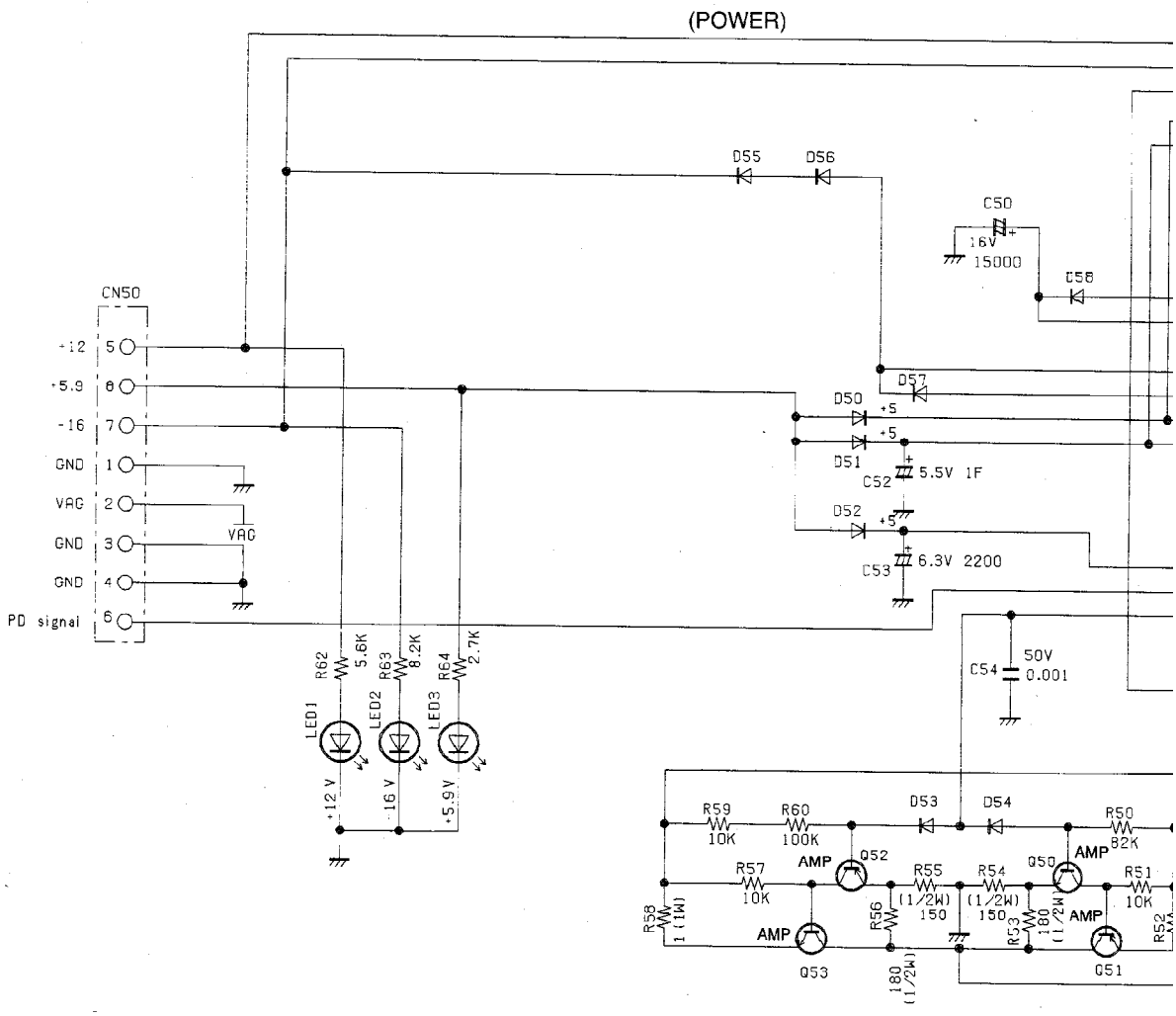
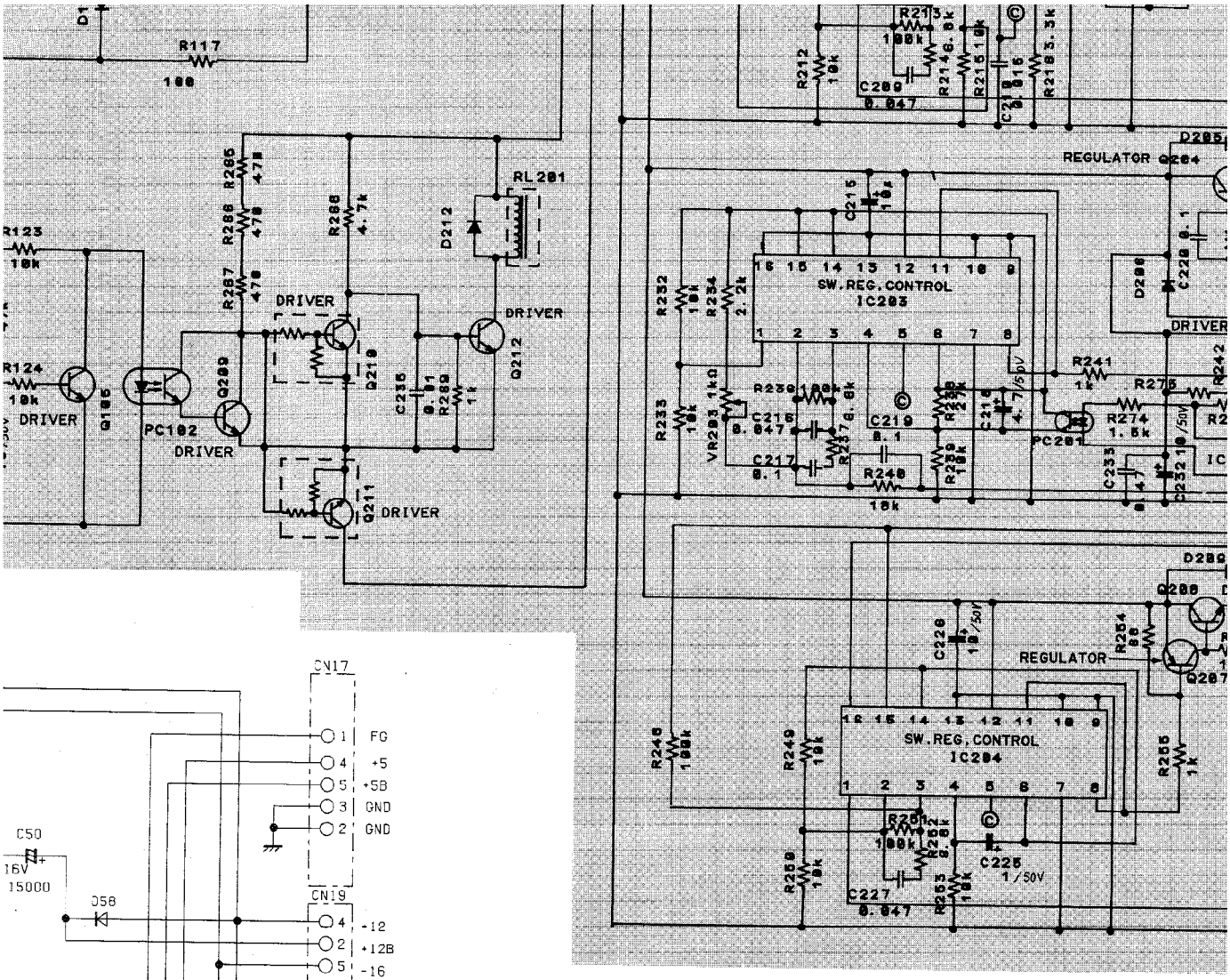


www.manualscenter.com

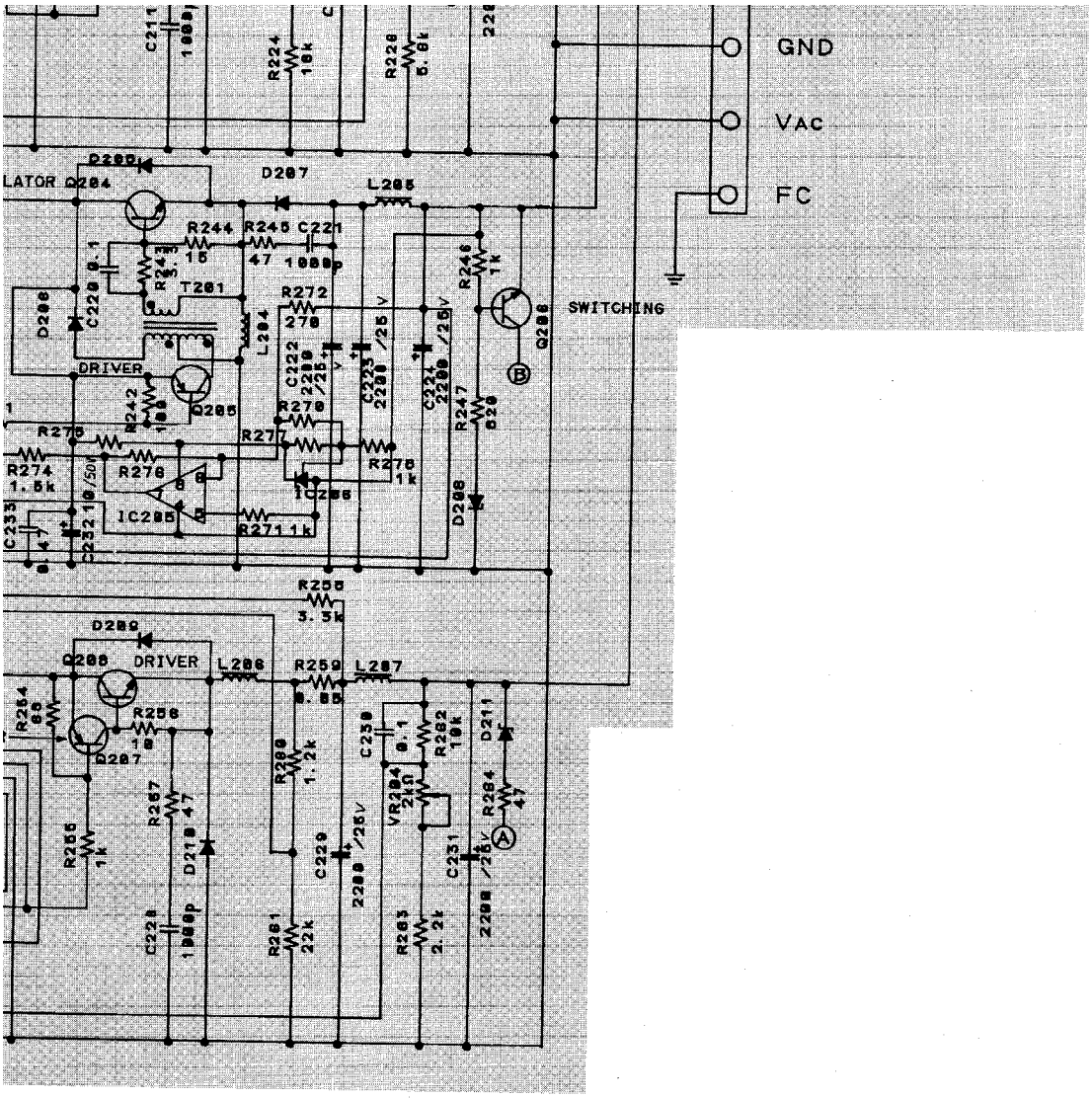




www.manualscenter.com



www.manualscenter.com

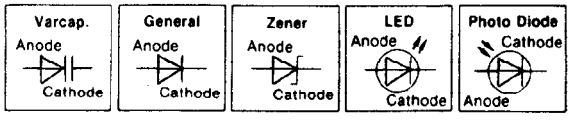


Note:

1. DC voltage measurements are taken with electronic voltmeter from negative terminal of battery.
2. This schematic diagram may be modified at any time with the development of new technology.
3. Important safety notice

   The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards.
   When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

4.



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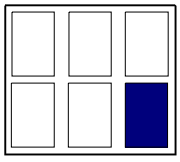

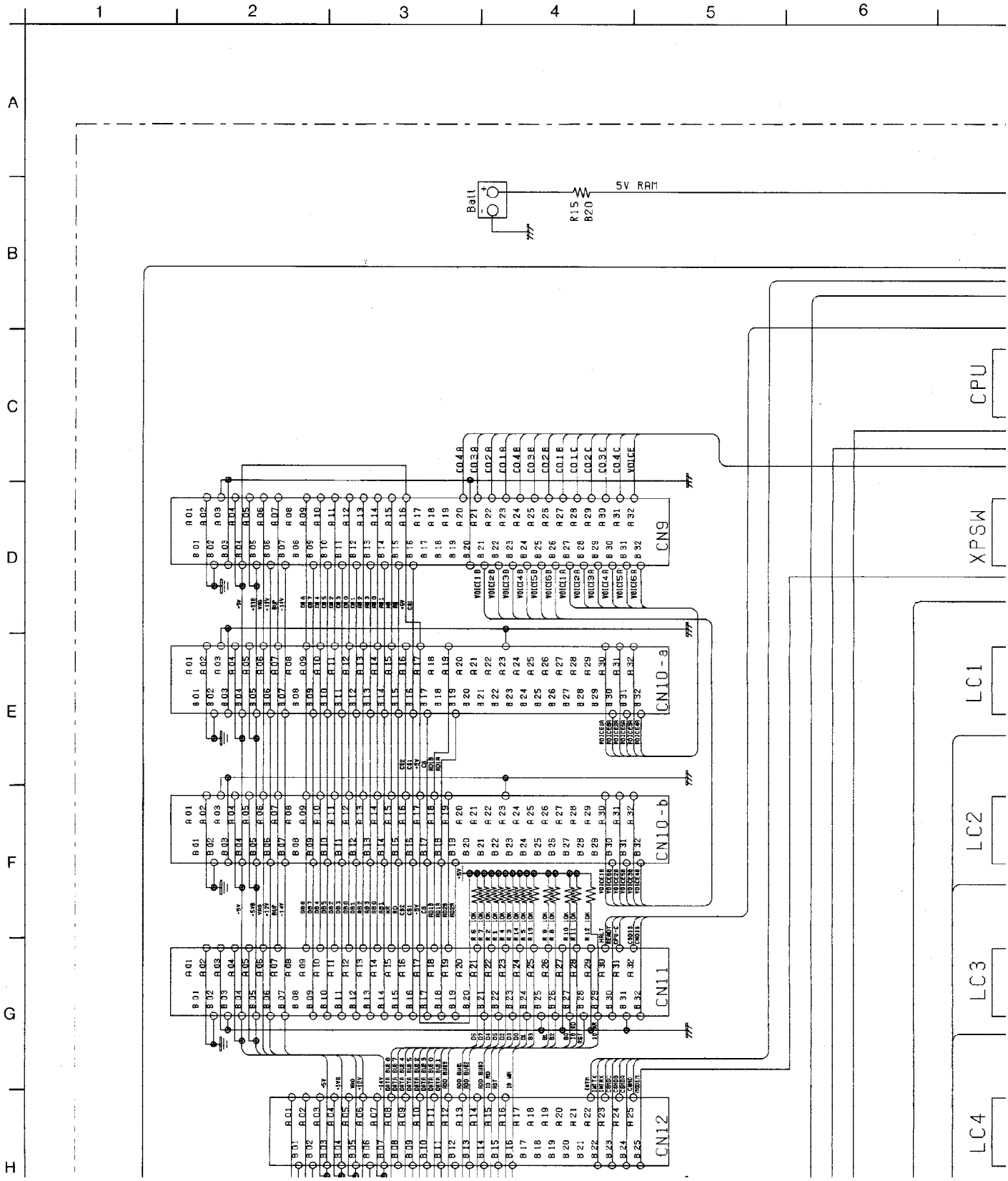

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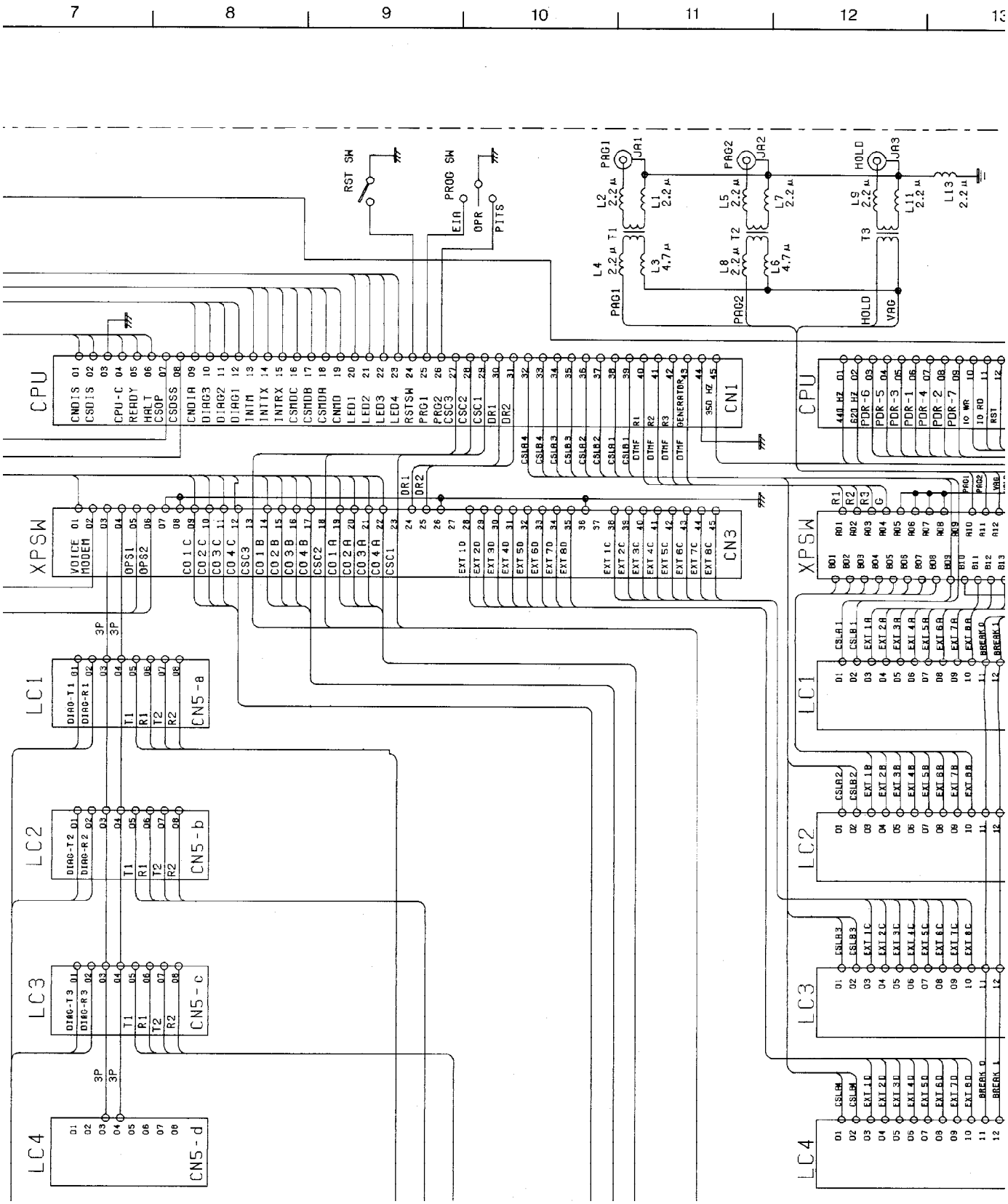
SCHEMATIC DIAGRAM (MAIN)



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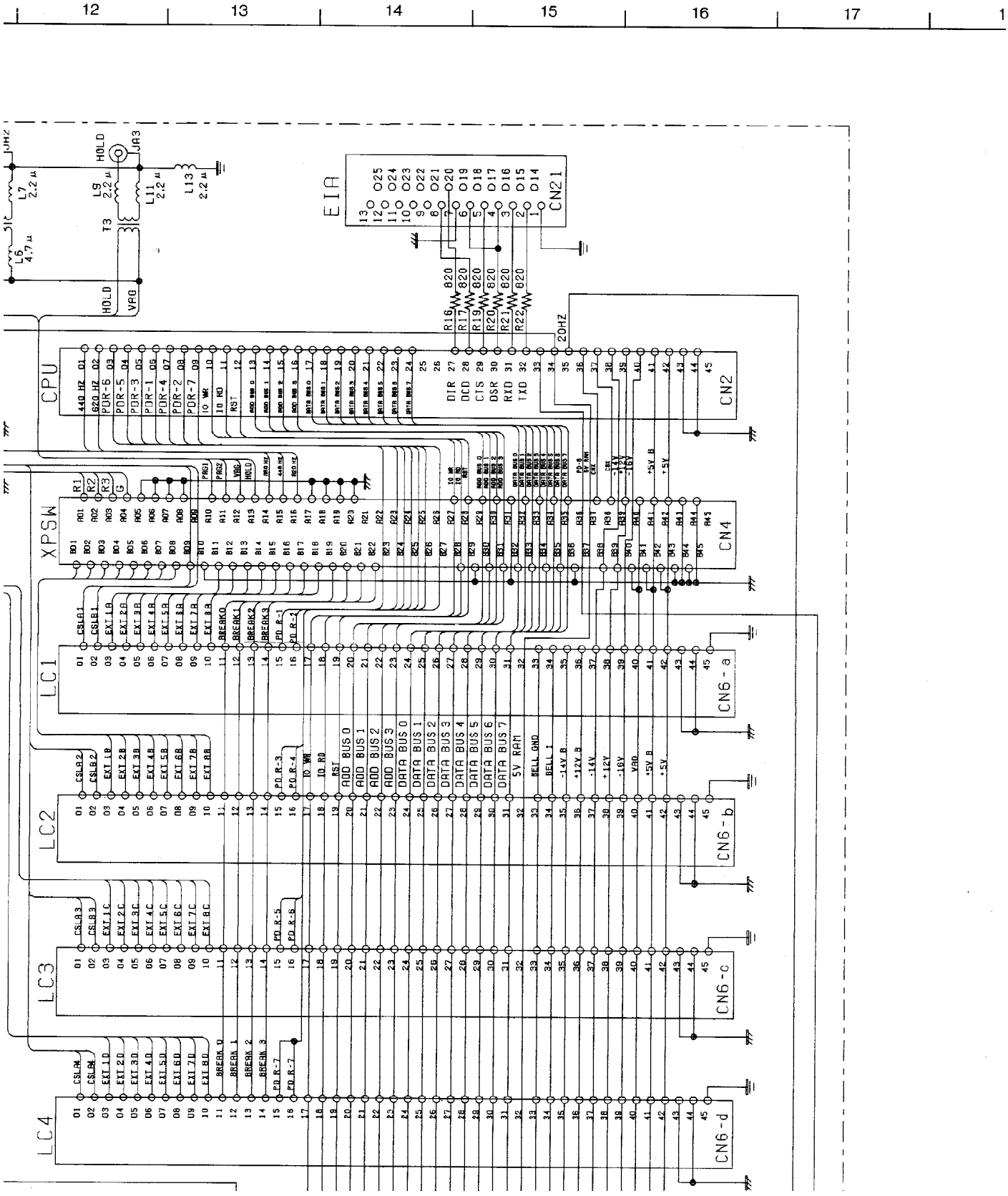
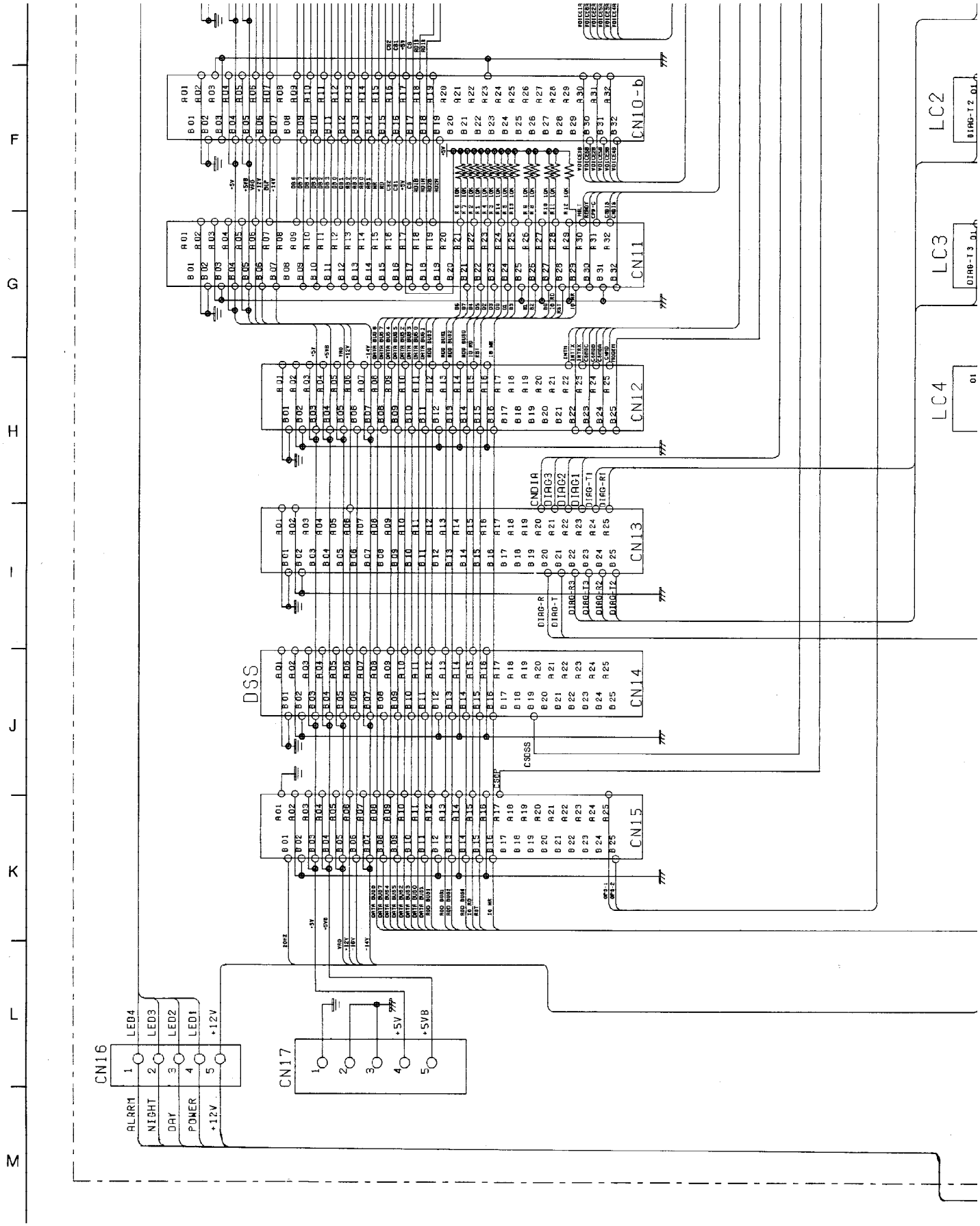


www.manualscenter.com



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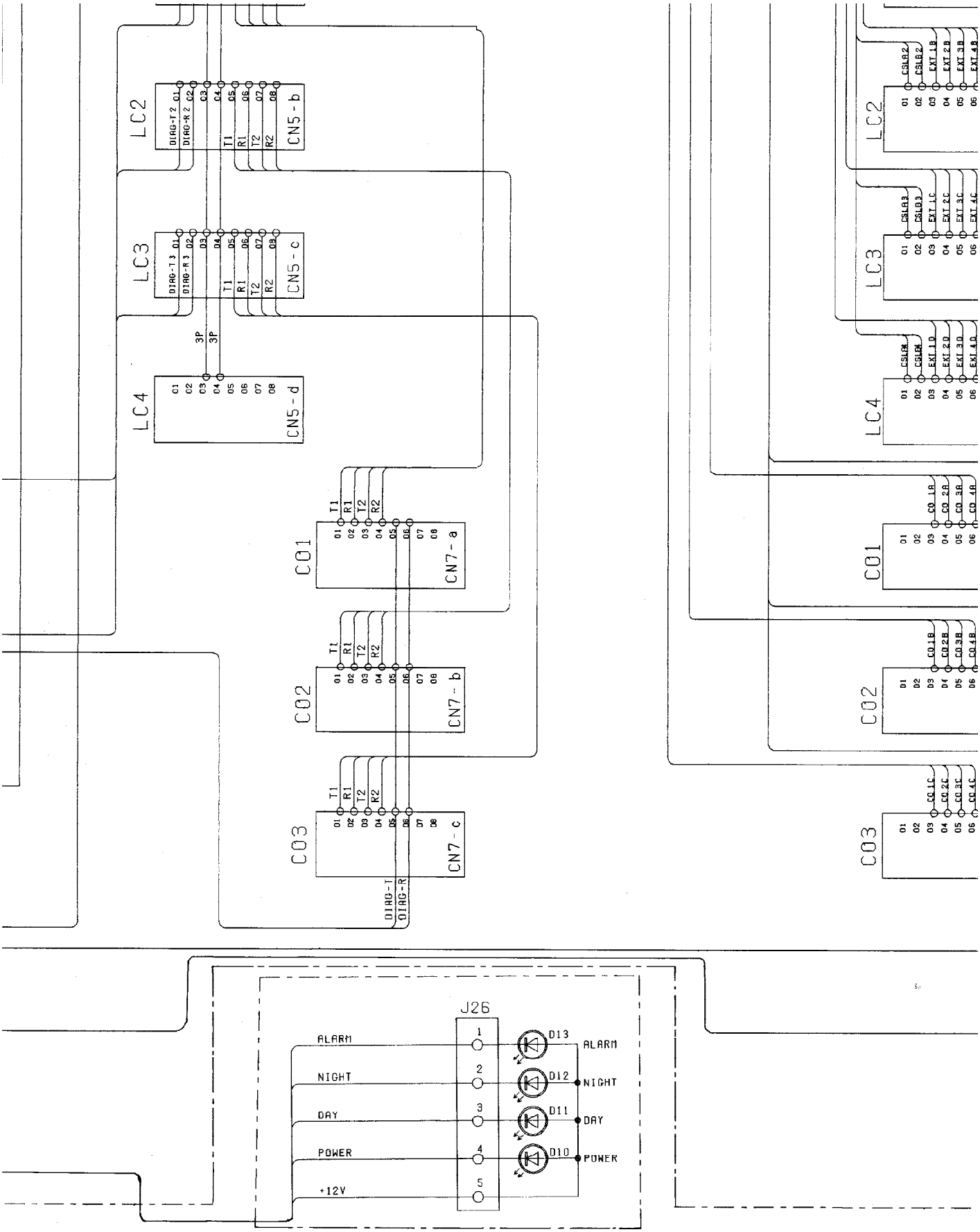

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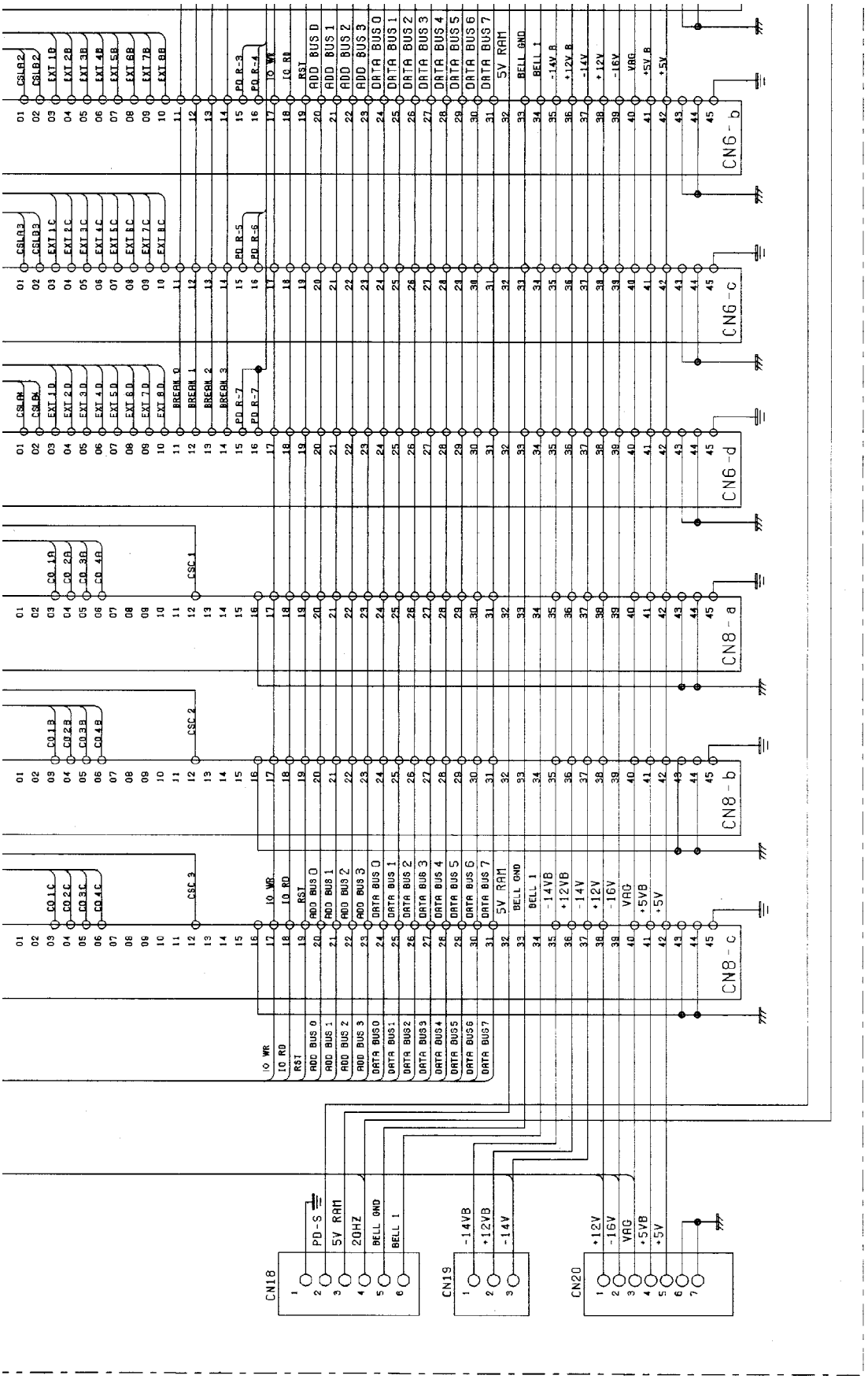

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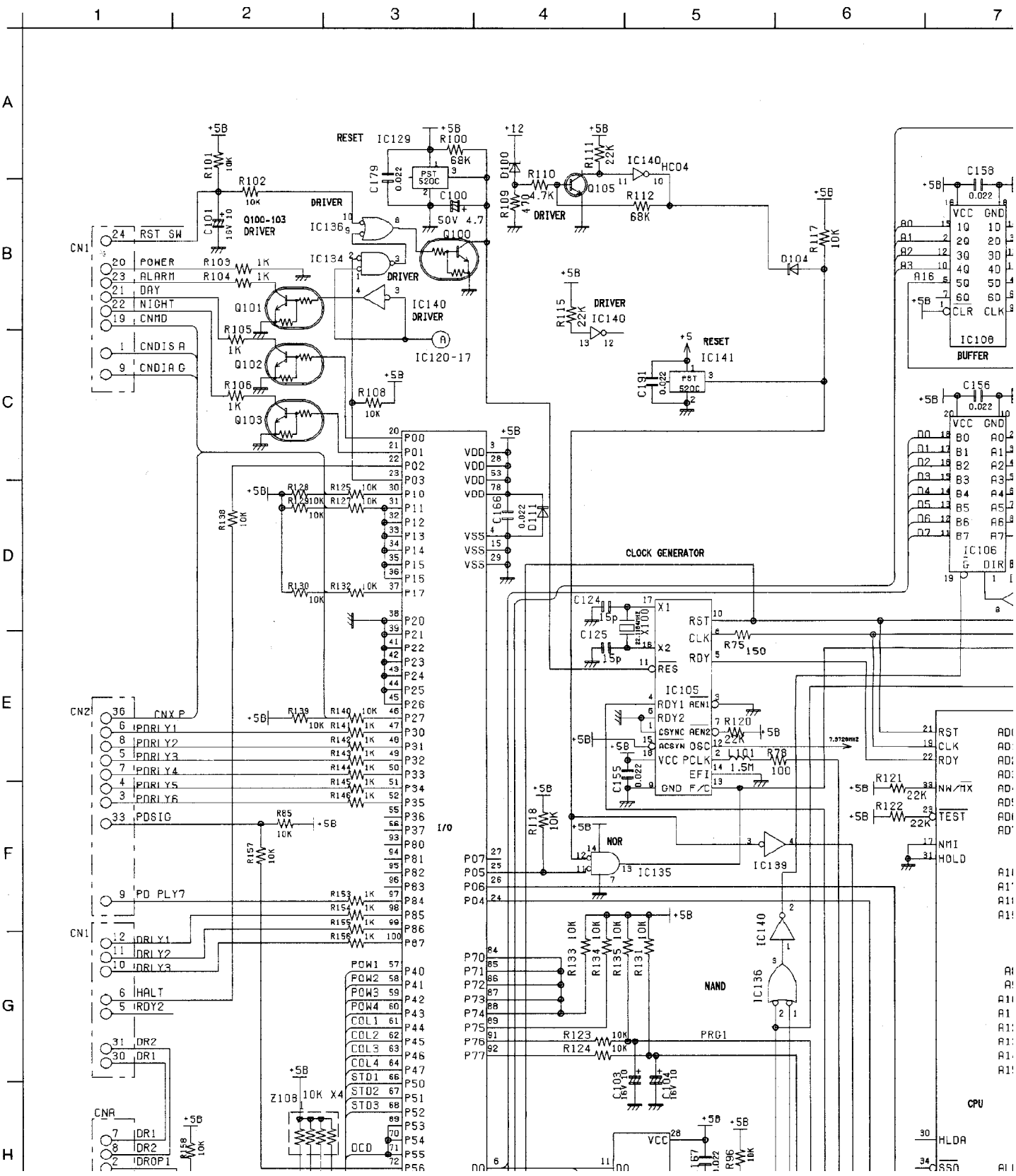

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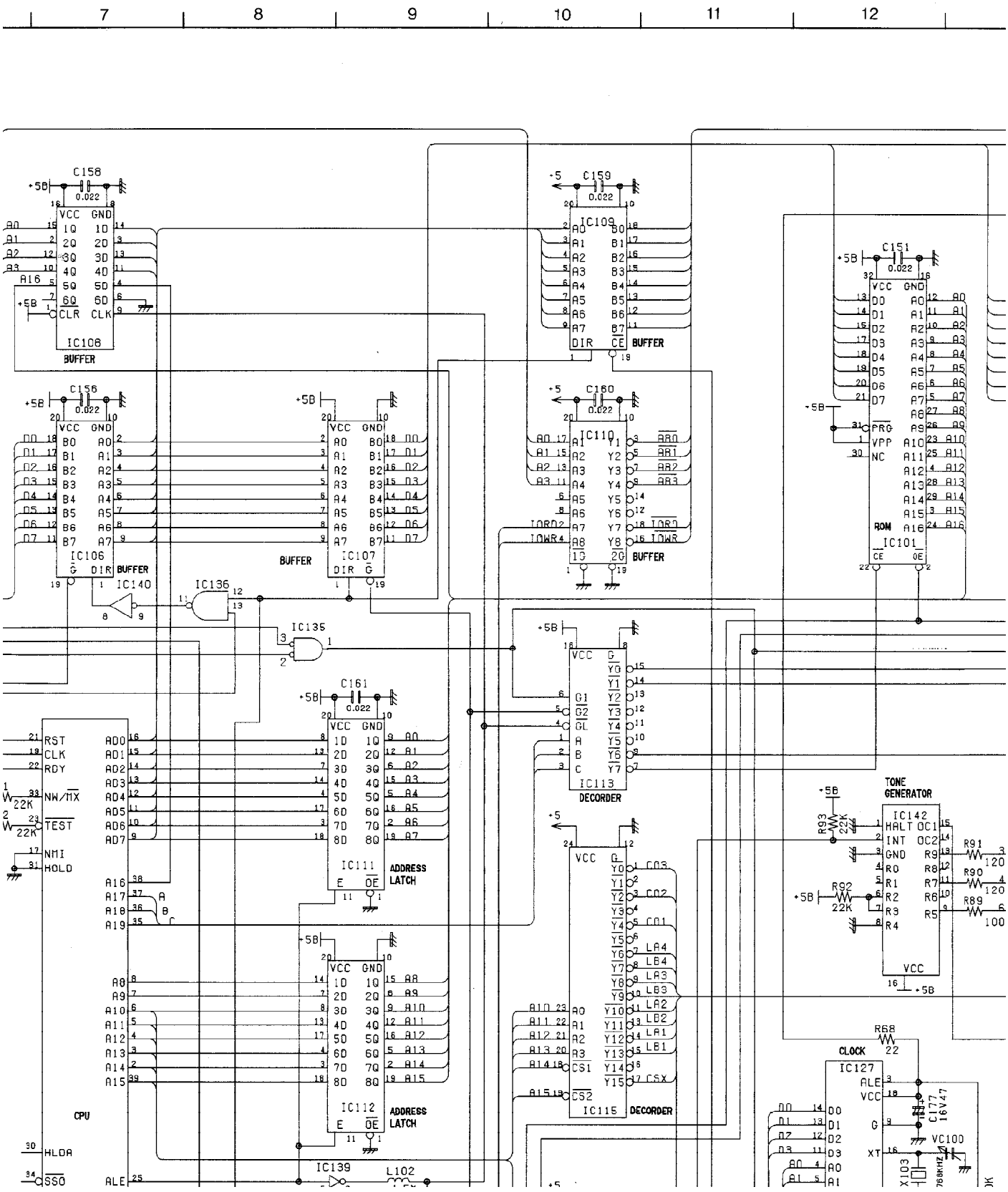
SCHEMATIC DIAGRAM (CPU)



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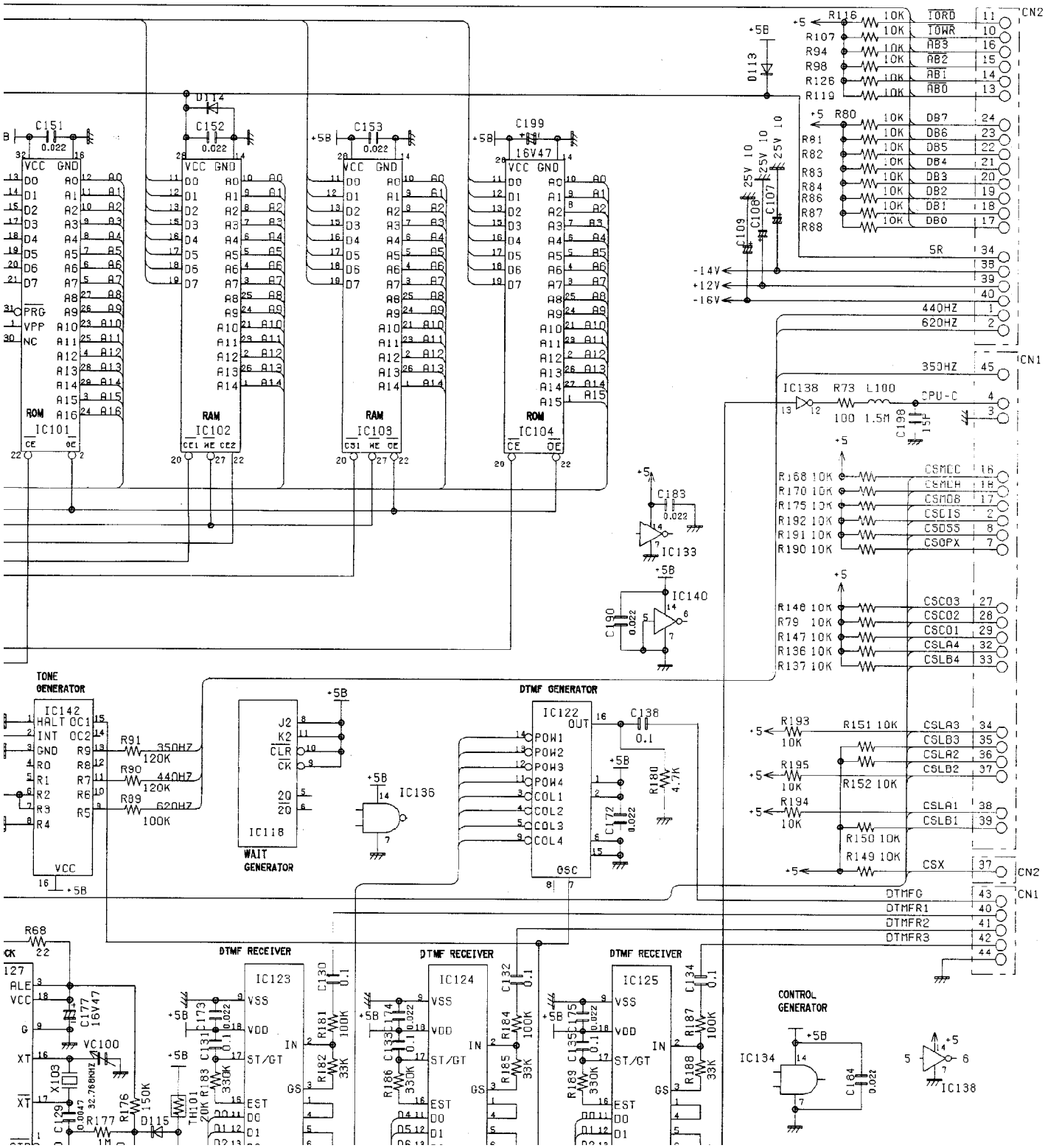

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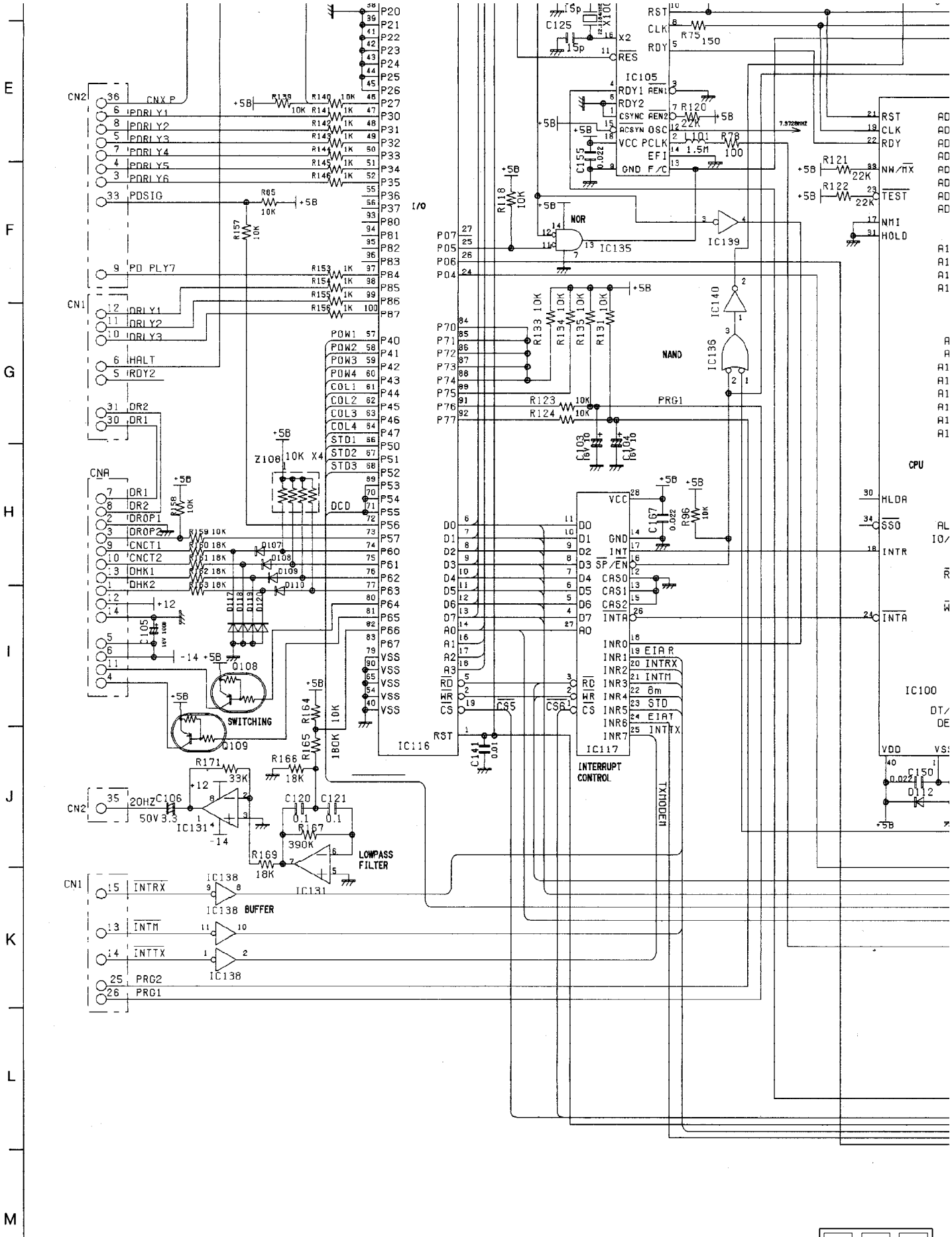

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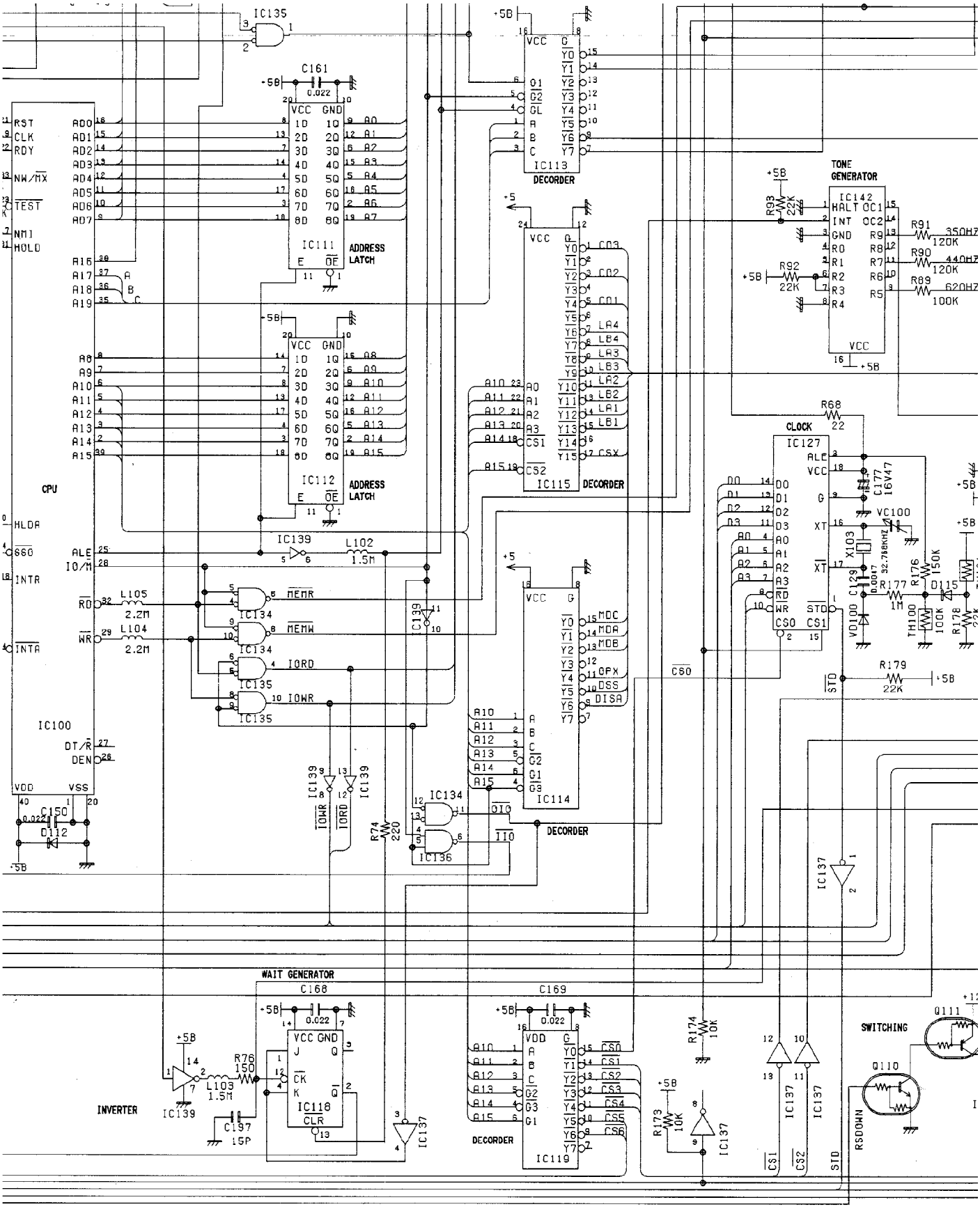

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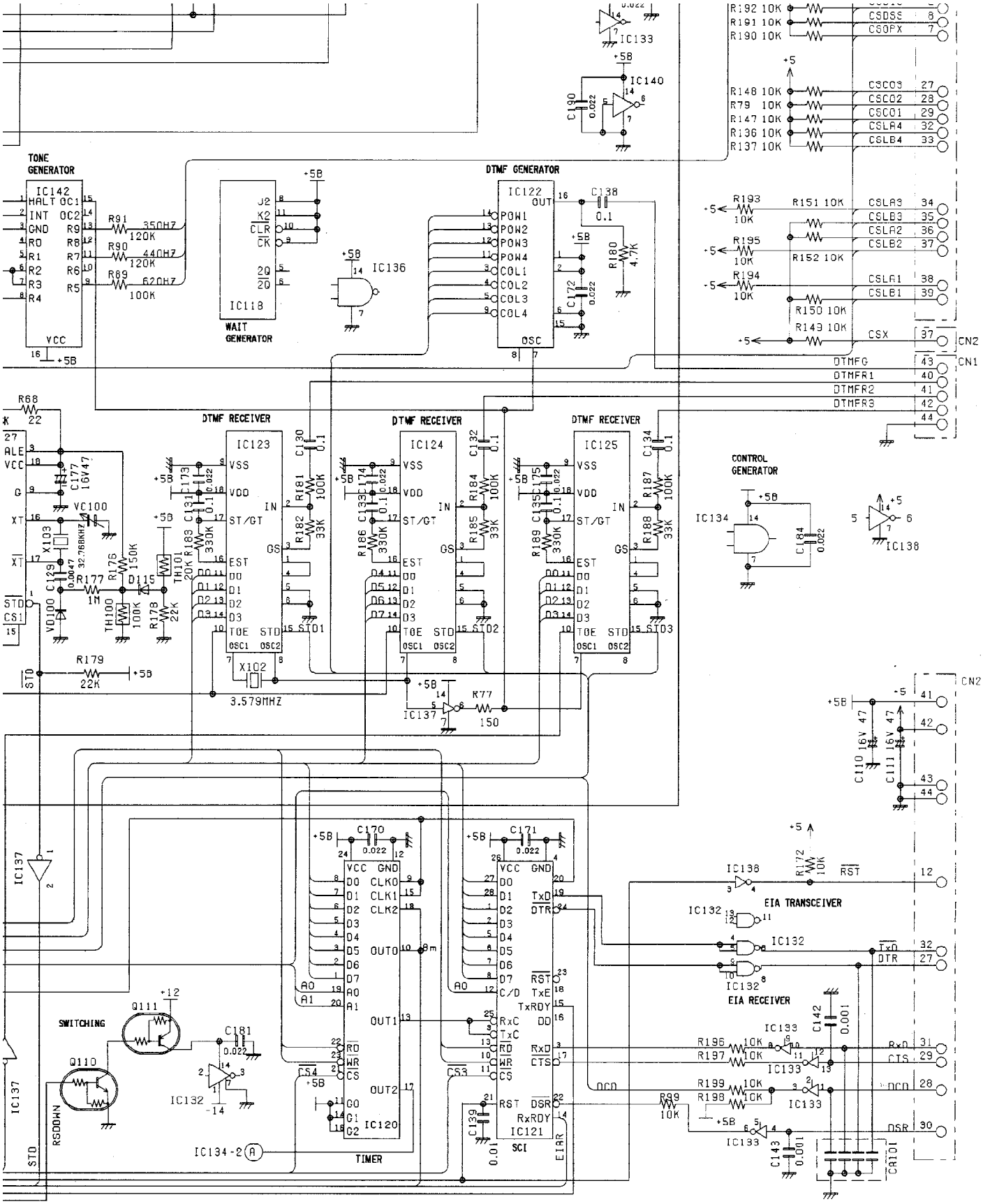

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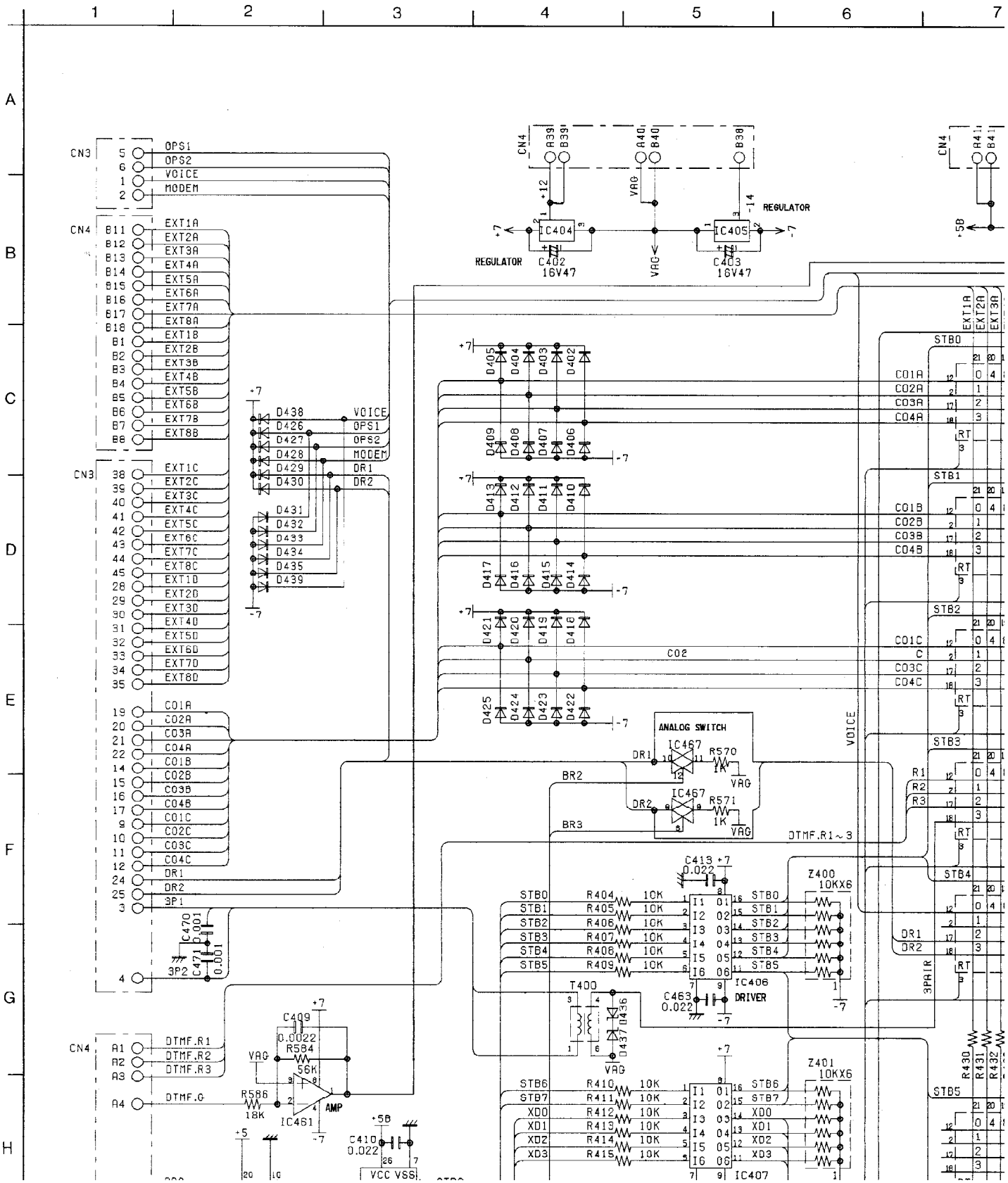

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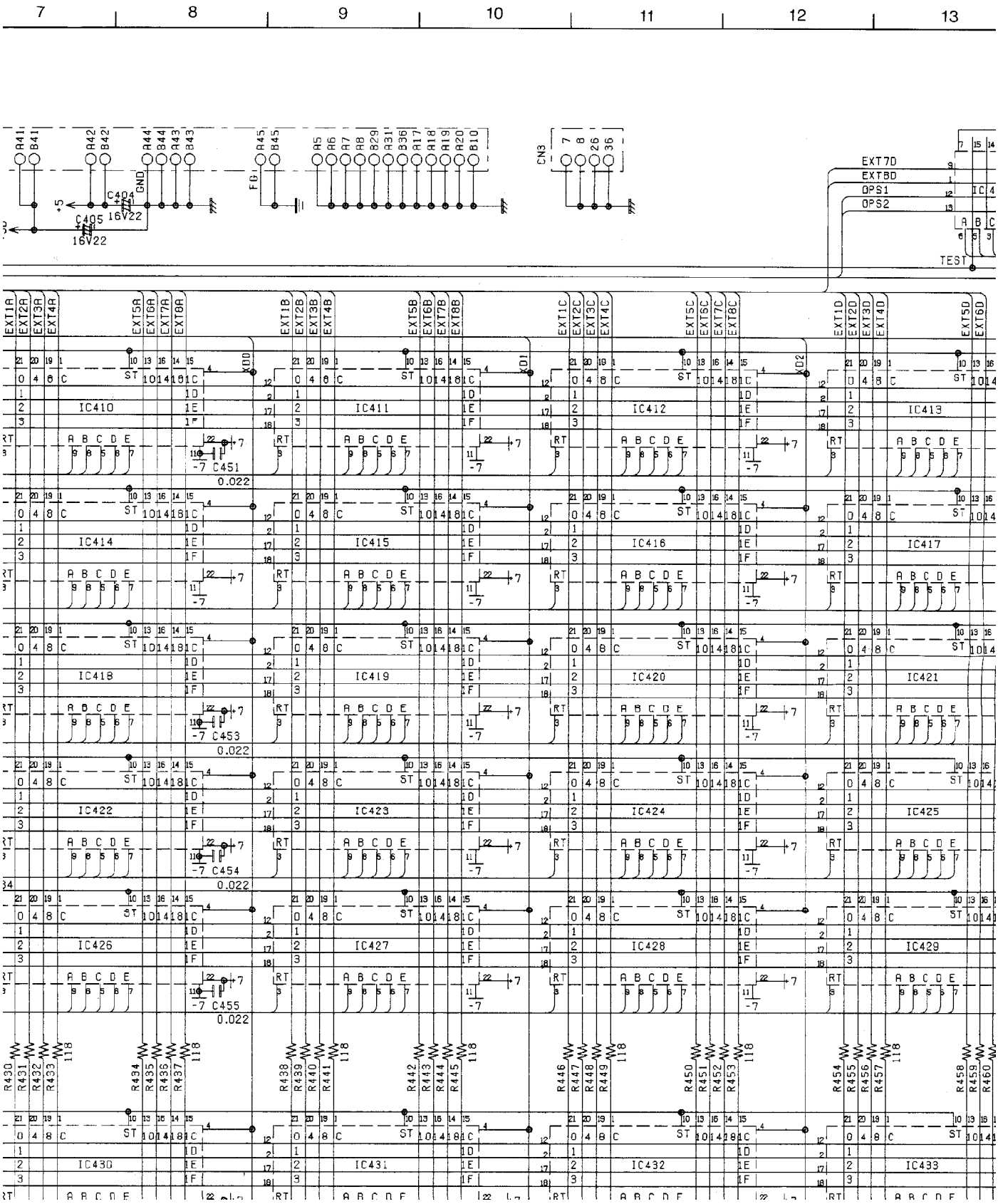
SCHEMATIC DIAGRAM (CROSS POINT SWITCH)



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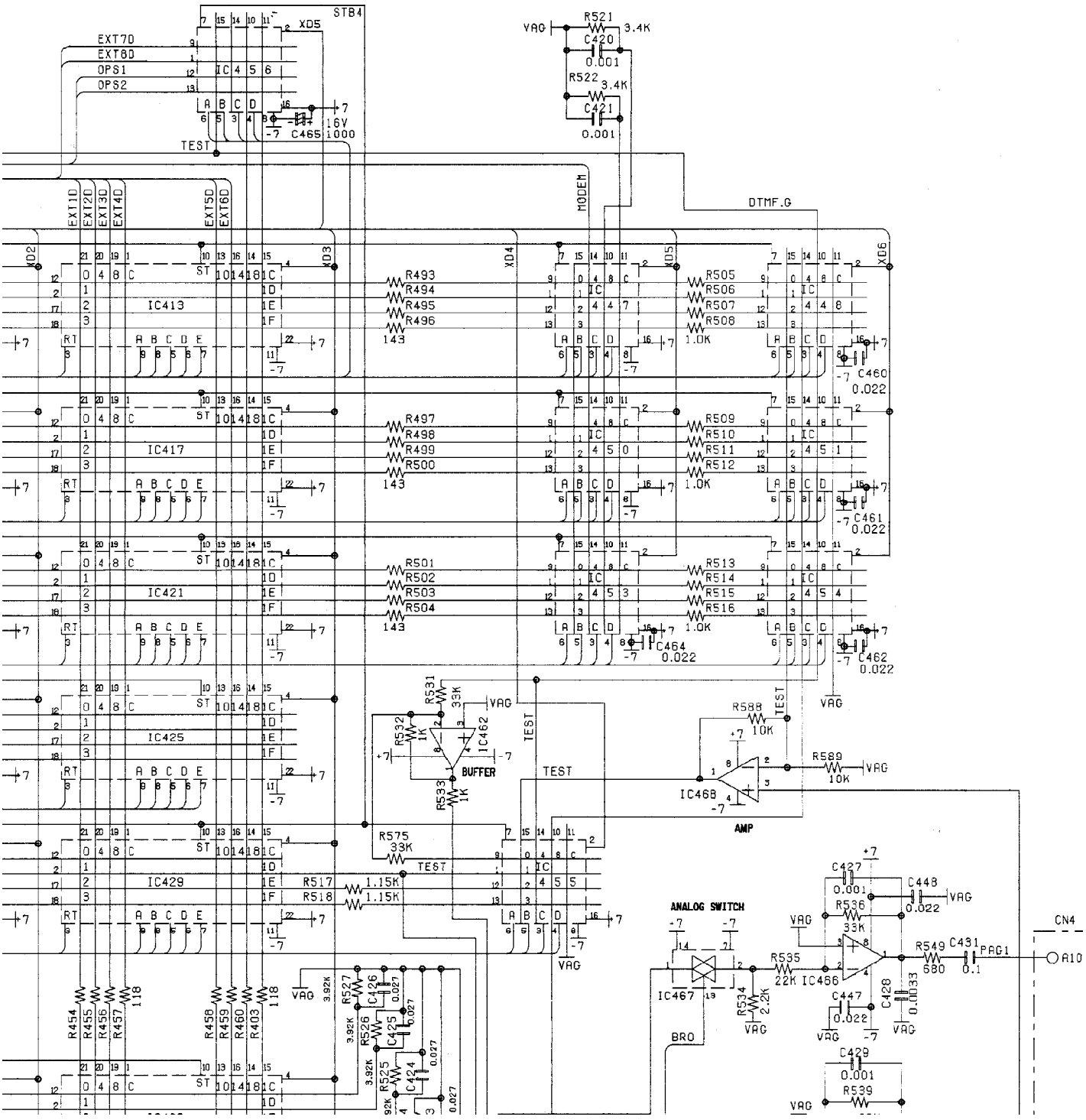
-I)

12 | 13 | 14 | 15 | 16 | 17 | 18



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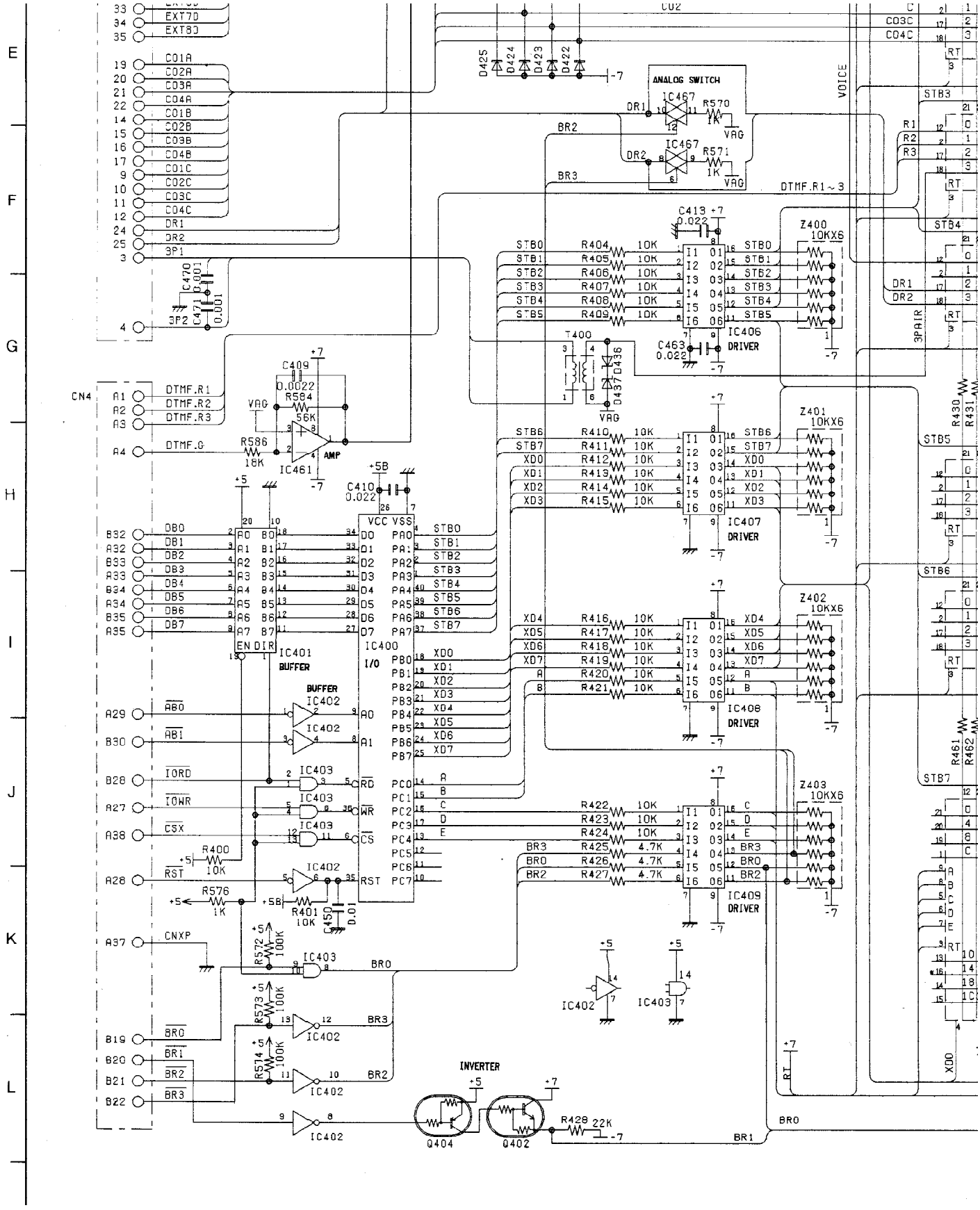

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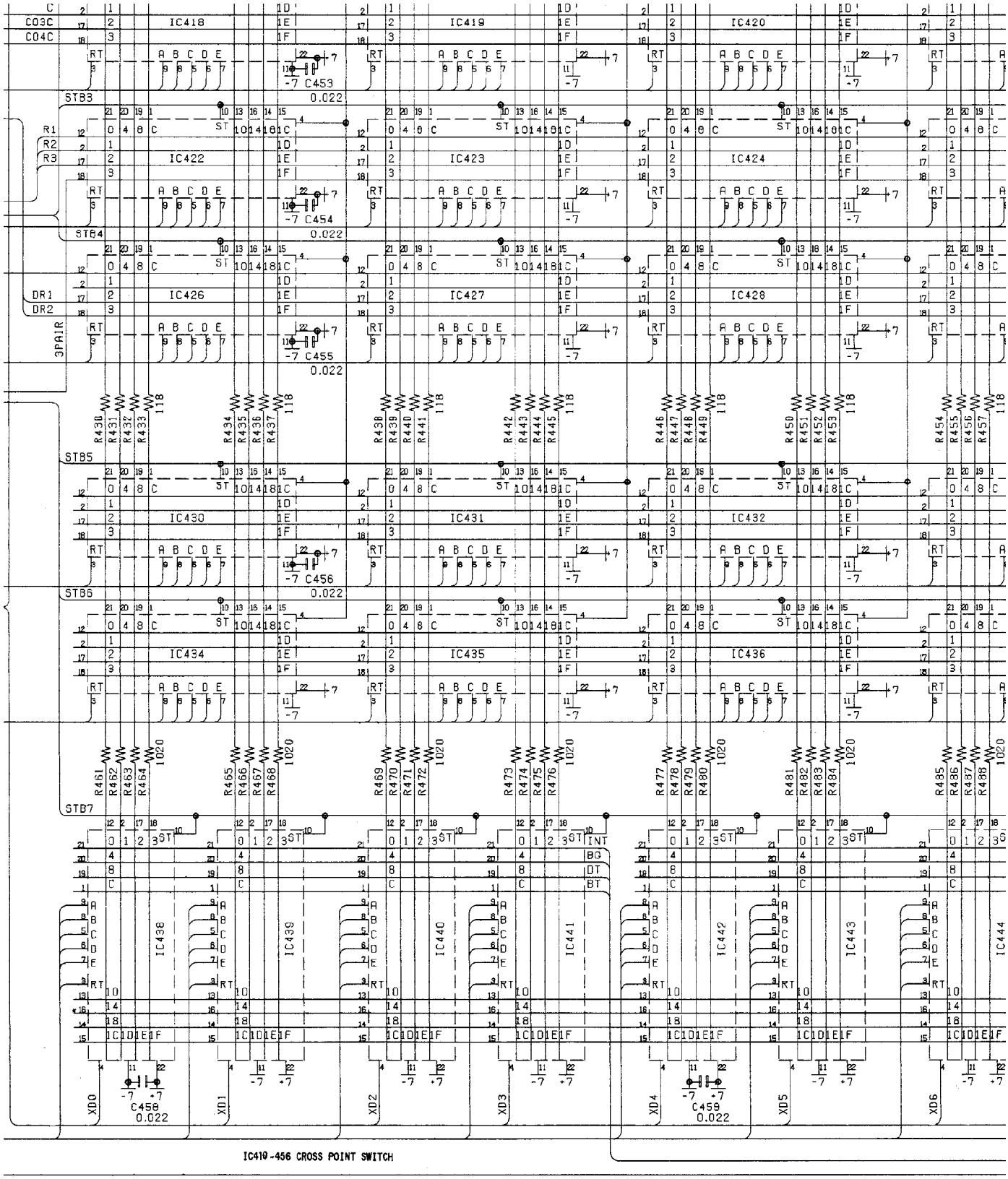

IC410-456 CROSS POINT SWITCH

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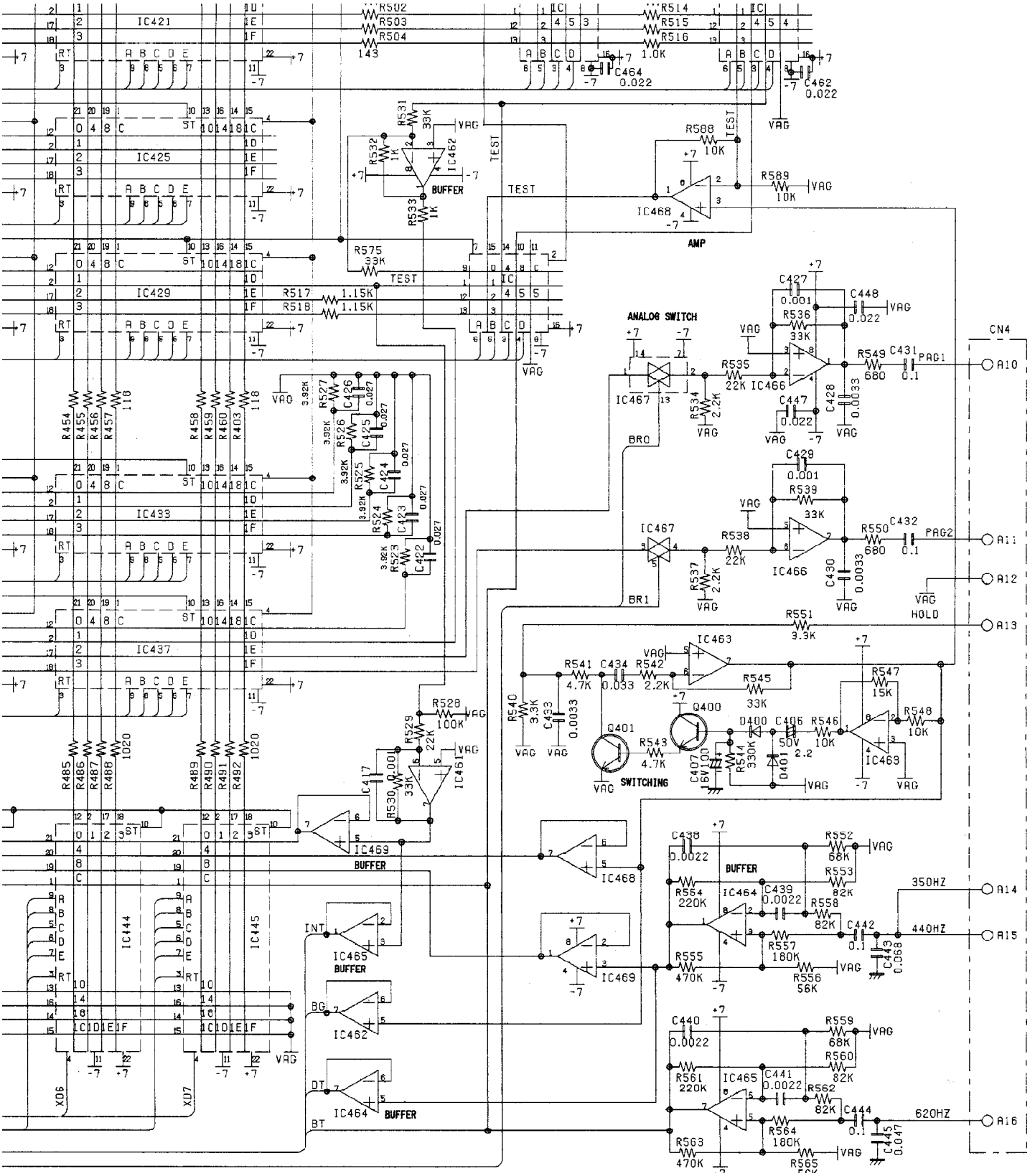

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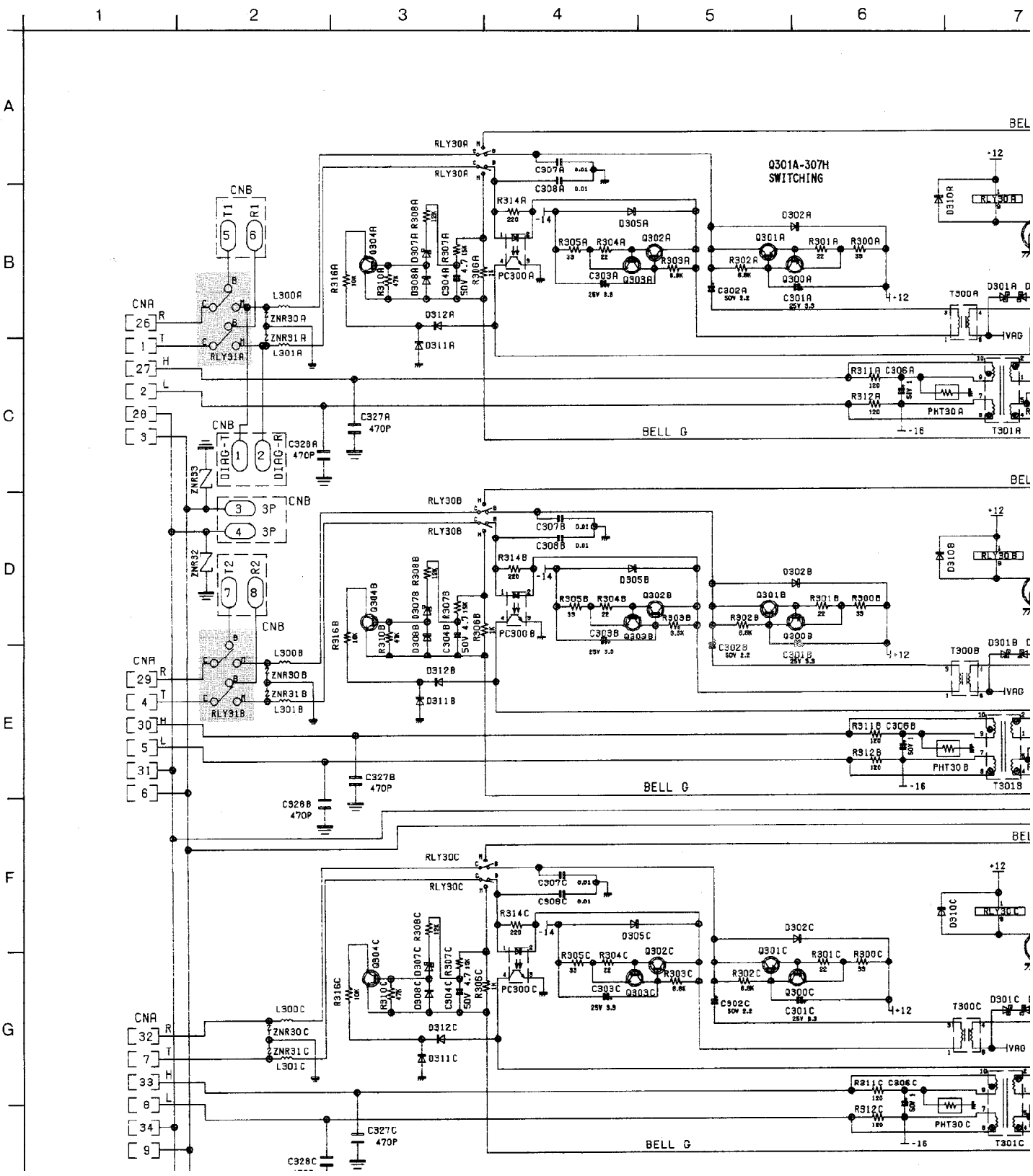

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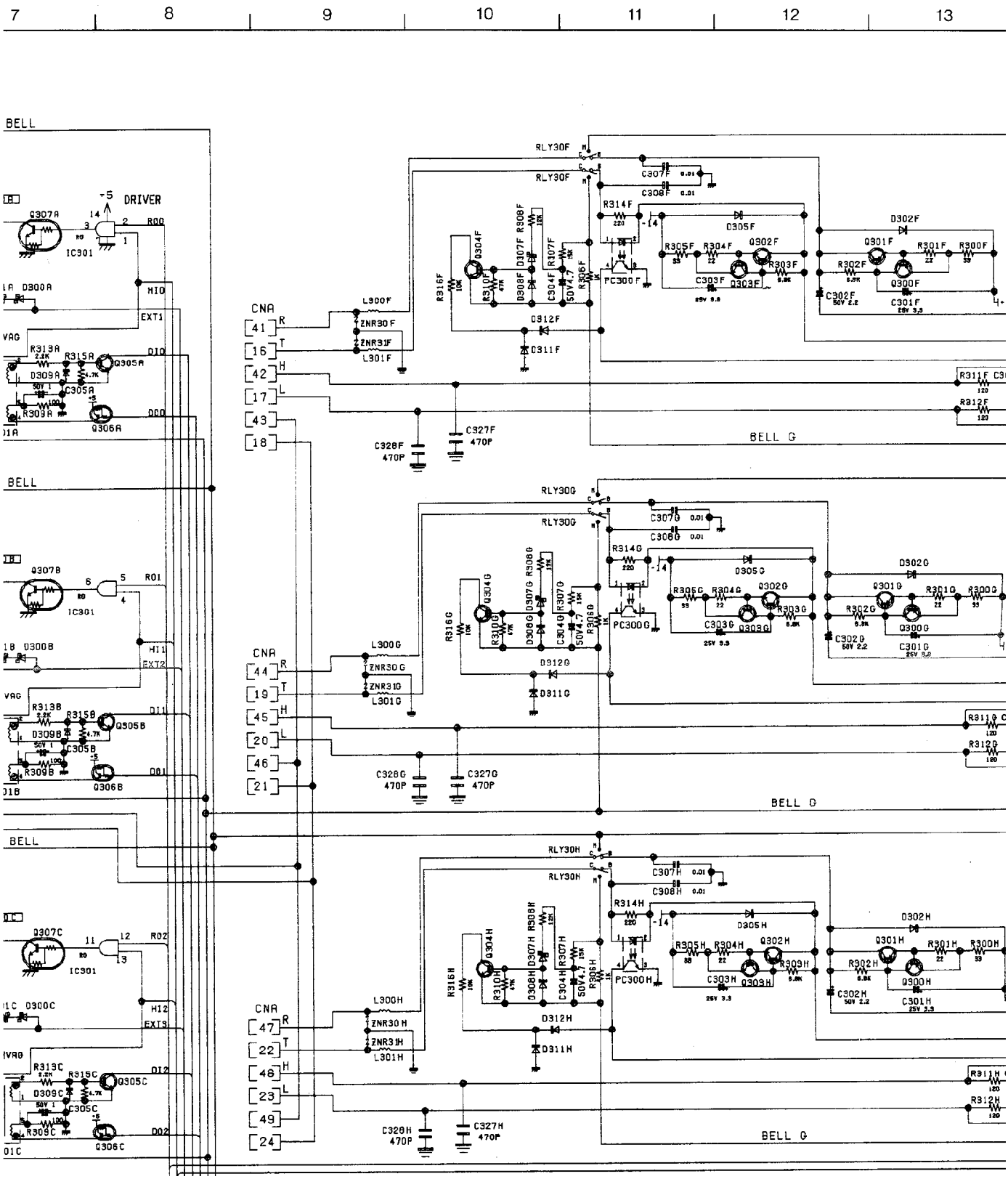
SCHEMATIC DIAGRAM (LC1, 2)



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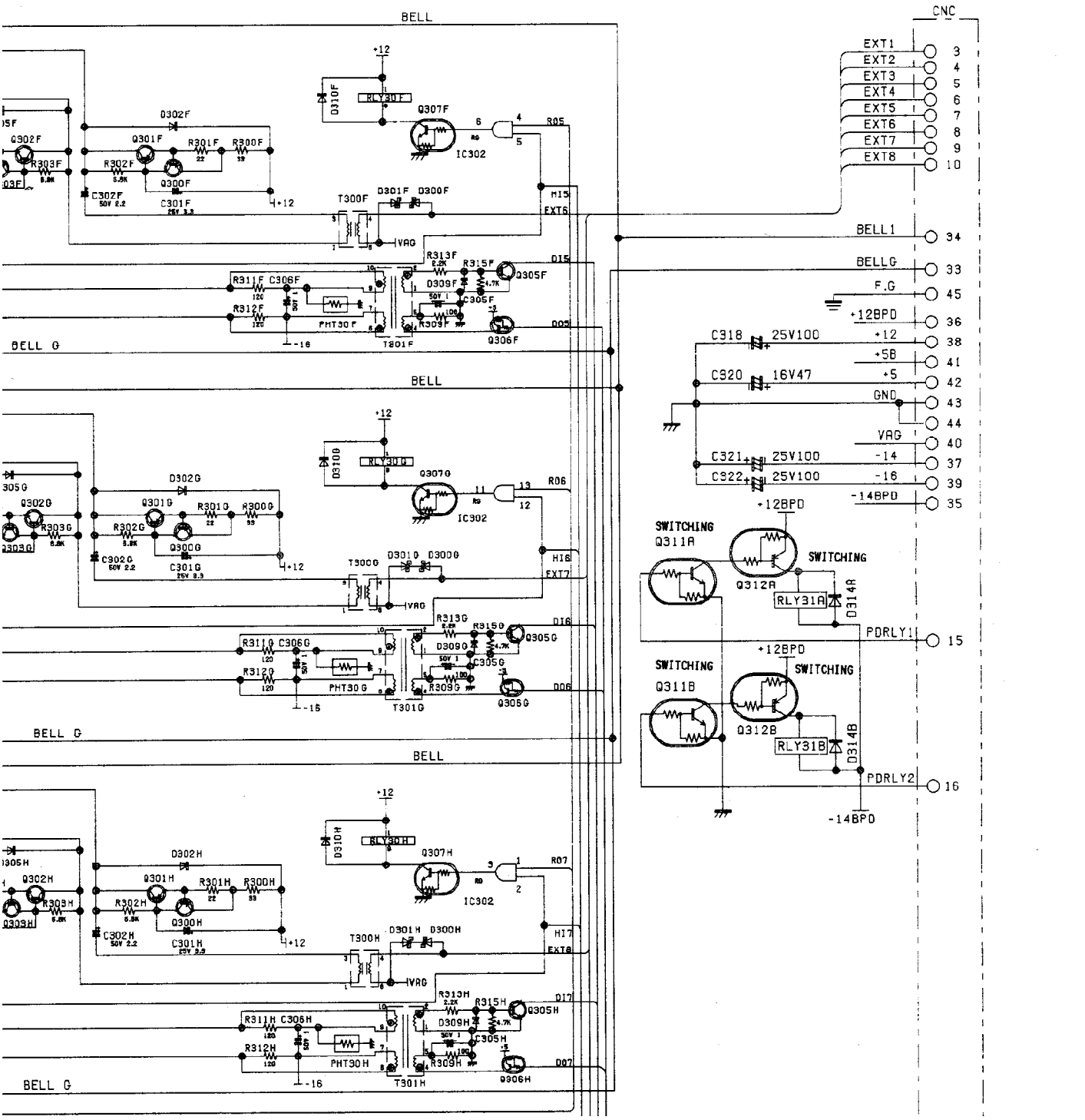

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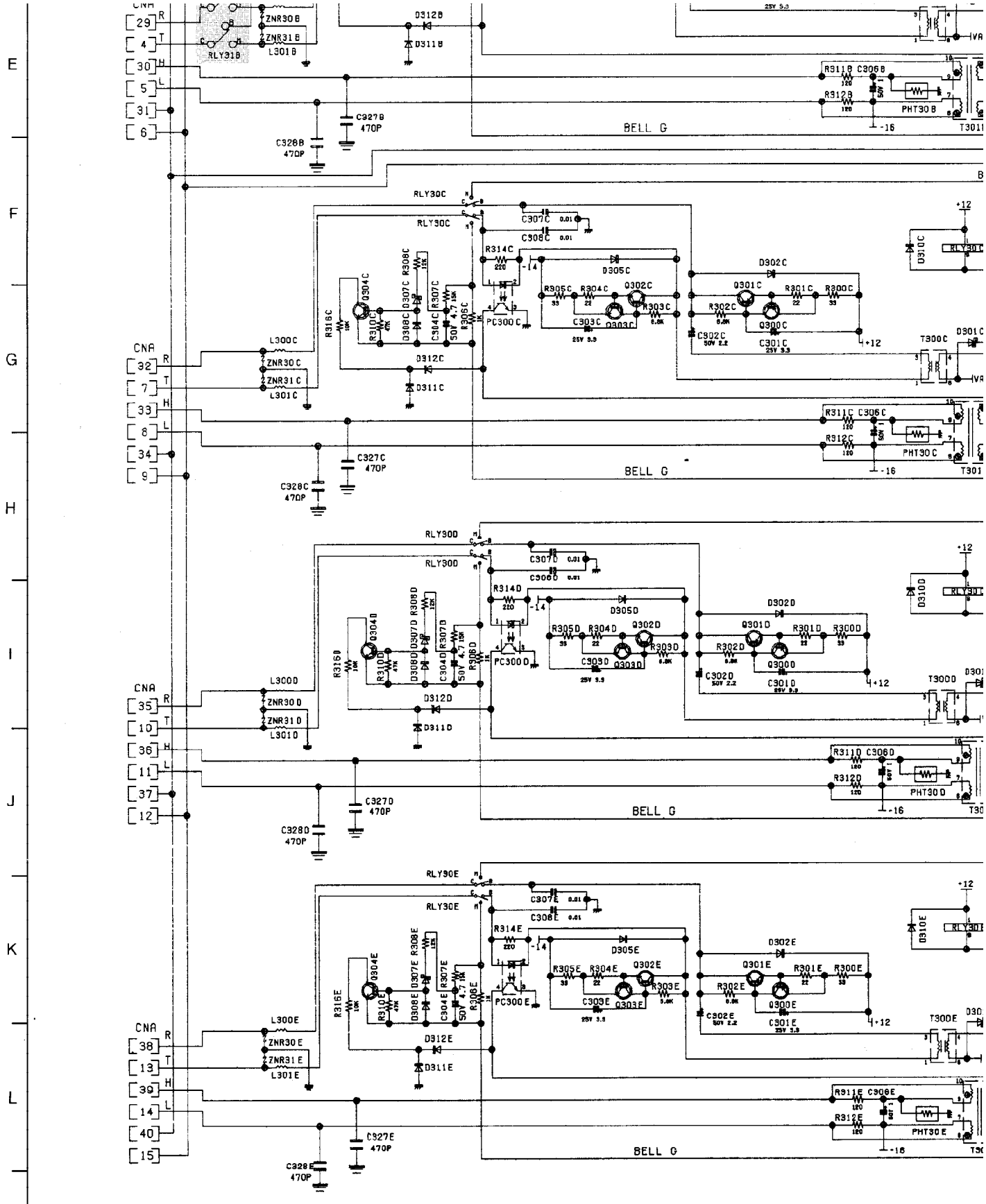

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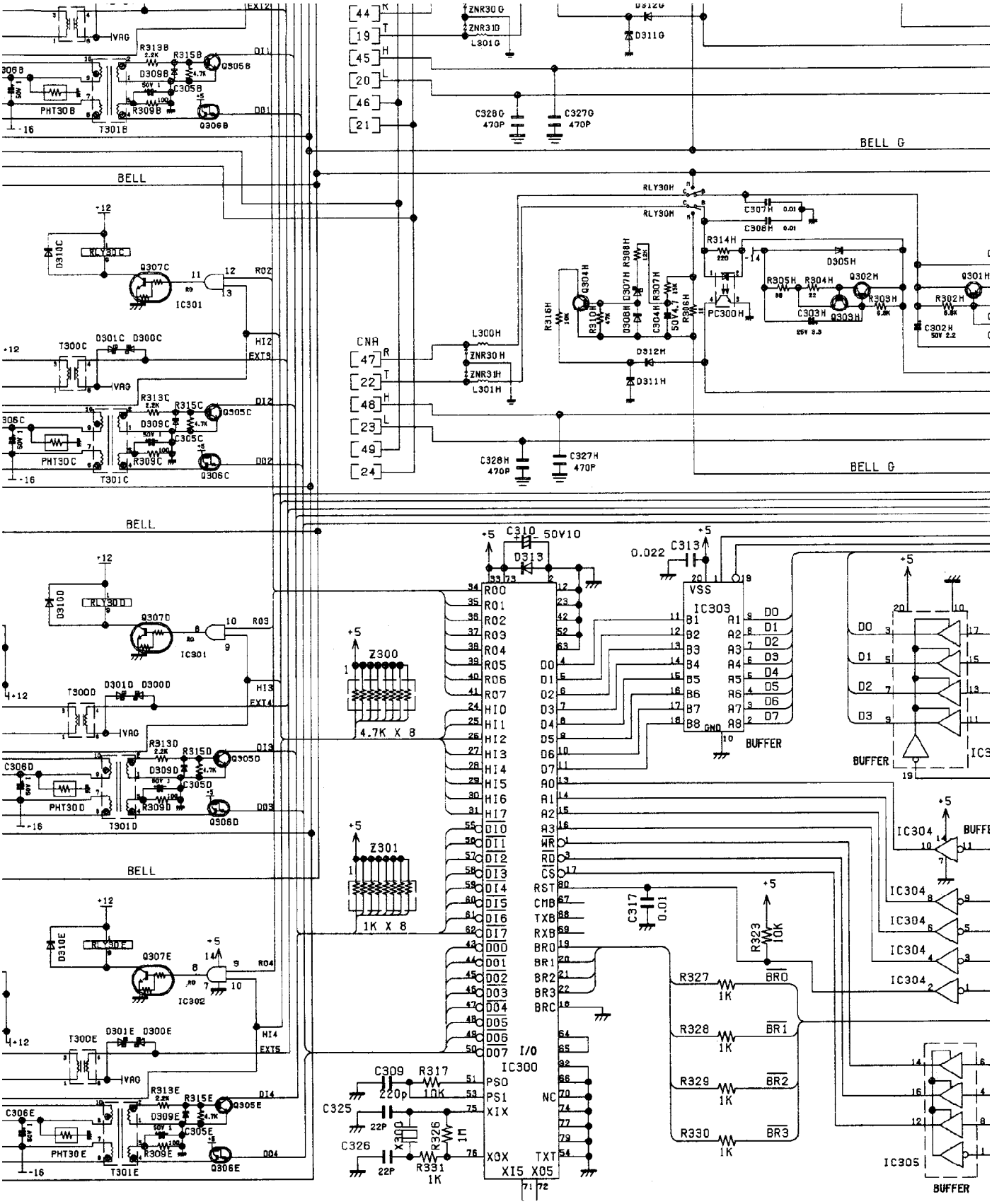

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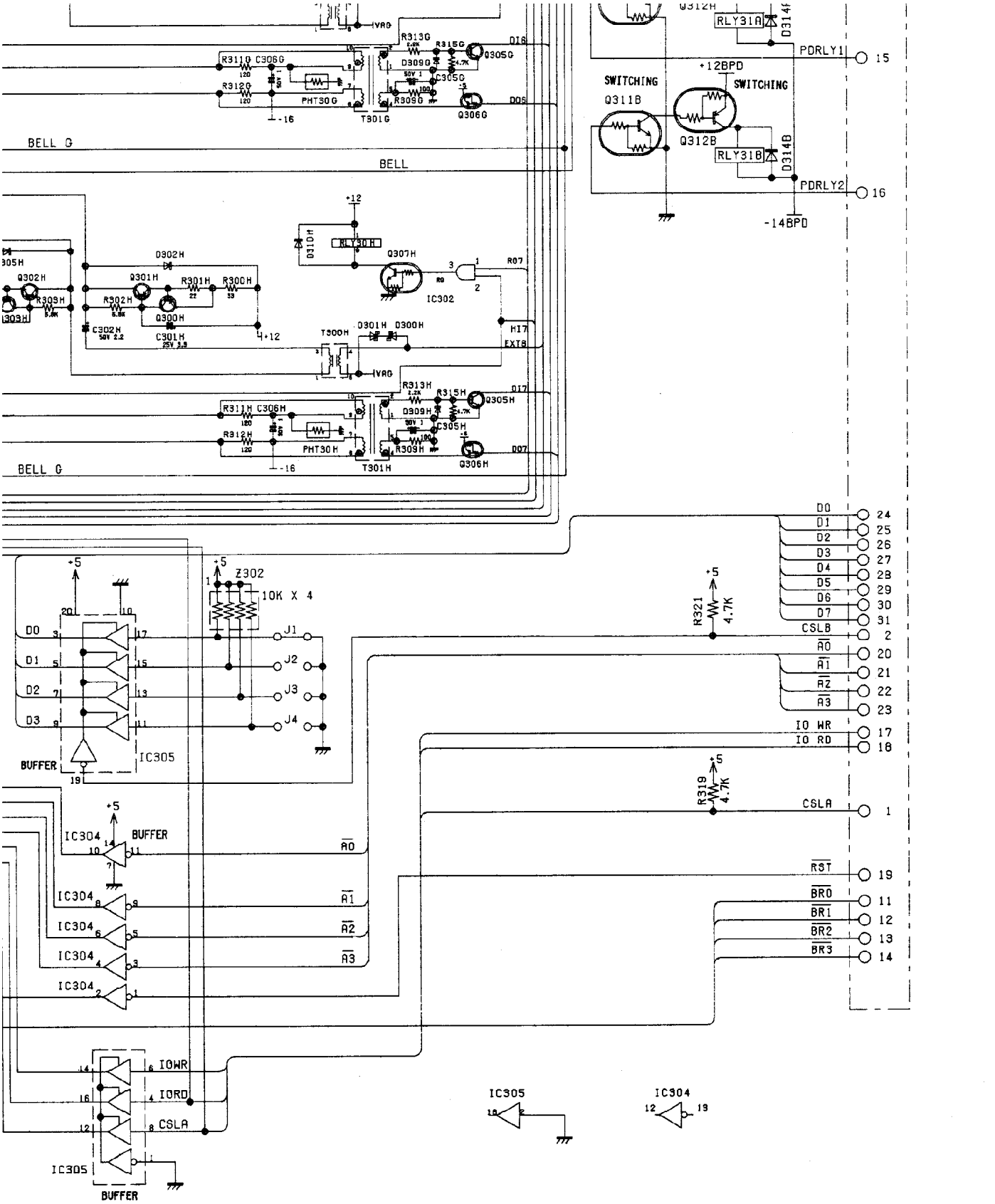

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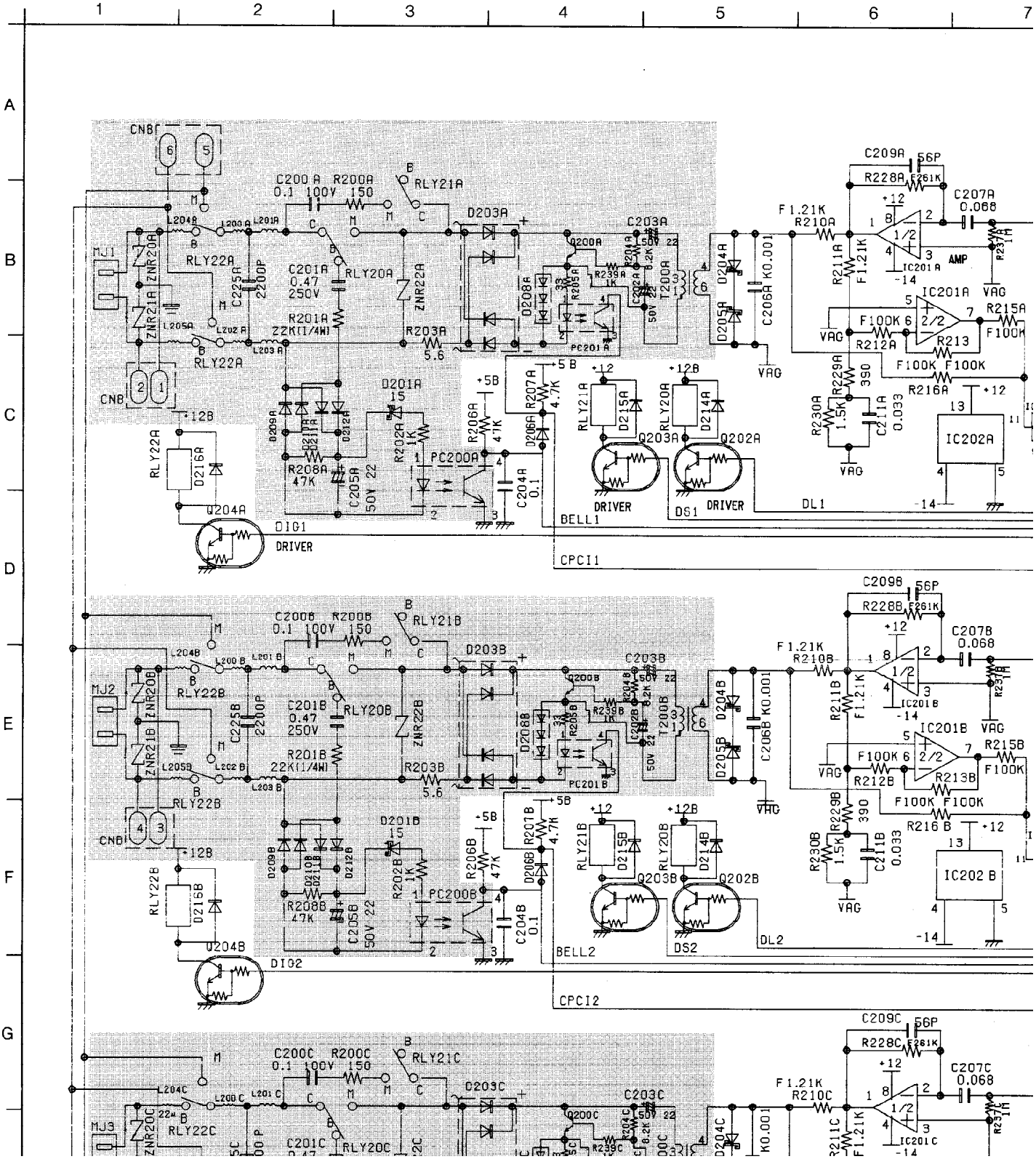

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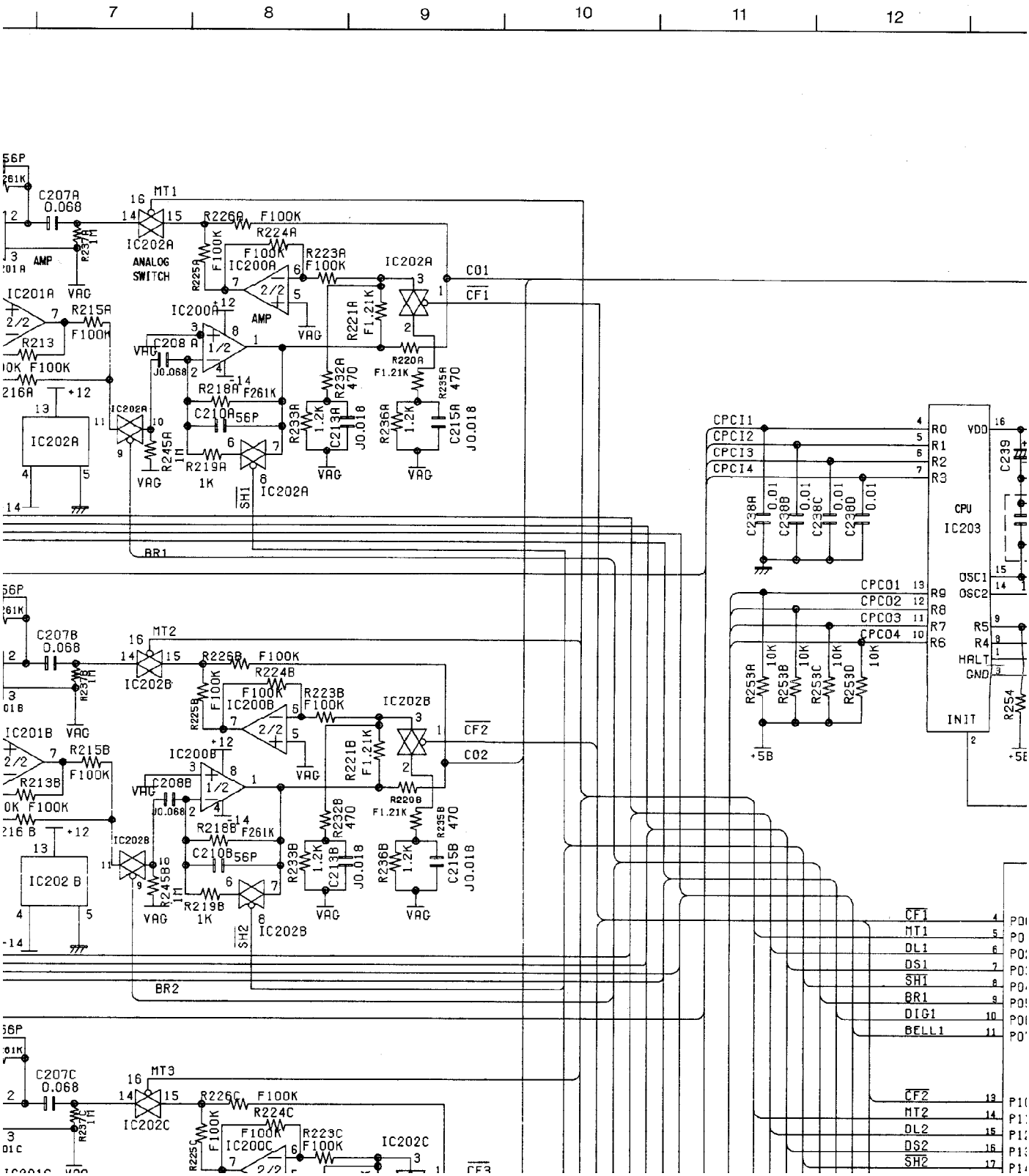
SCHEMATIC DIAGRAM (CO-1)



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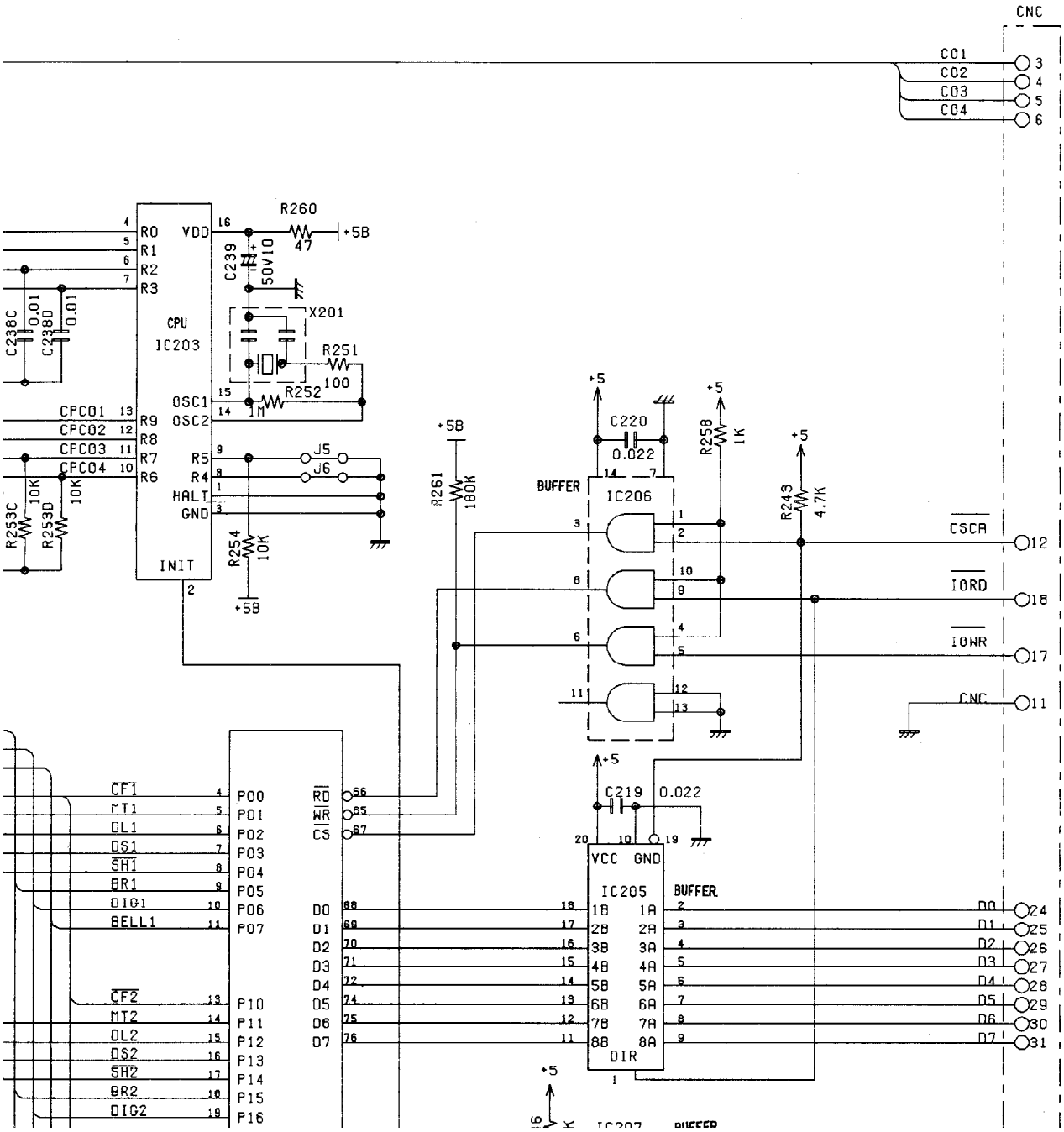

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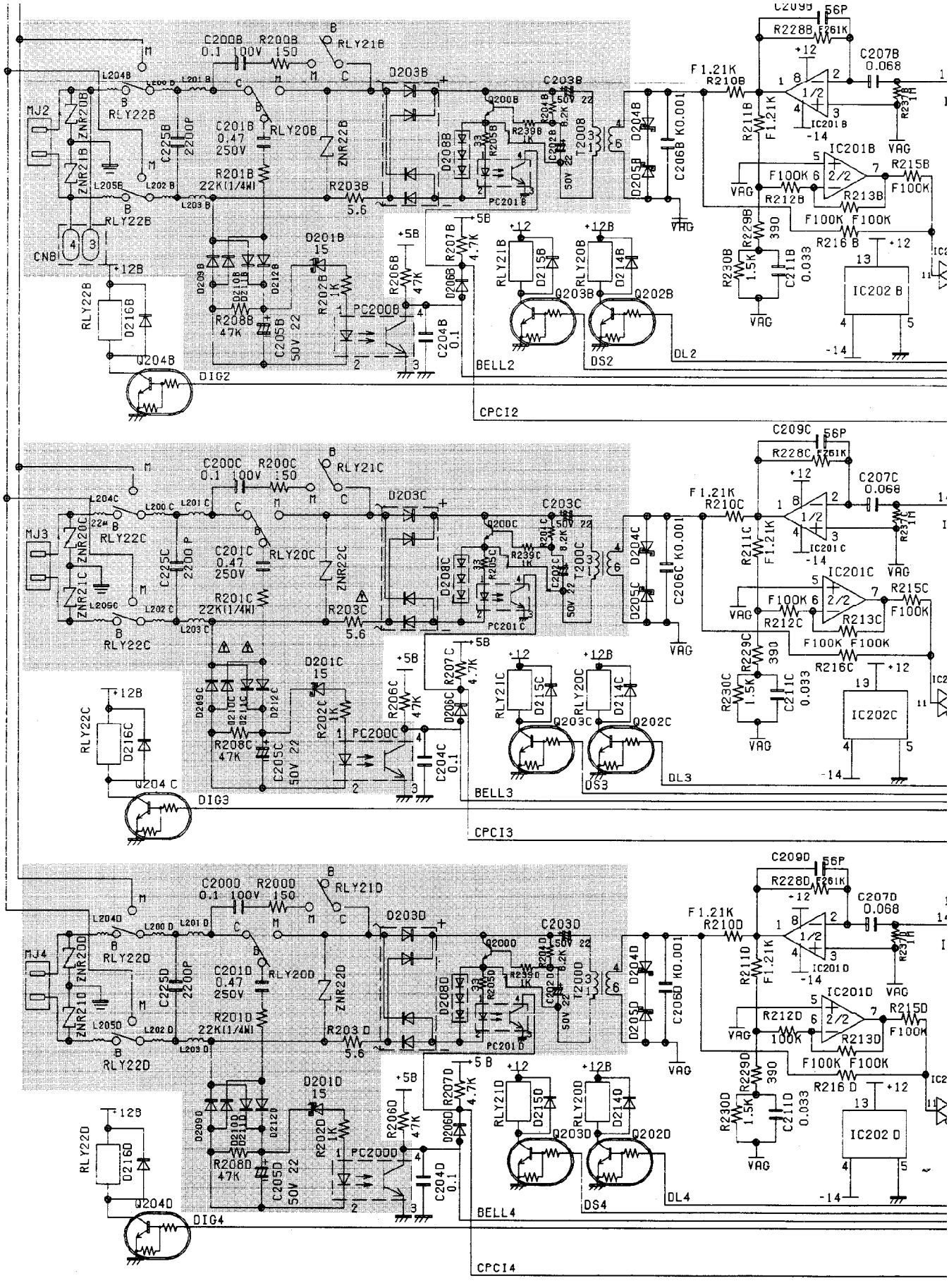

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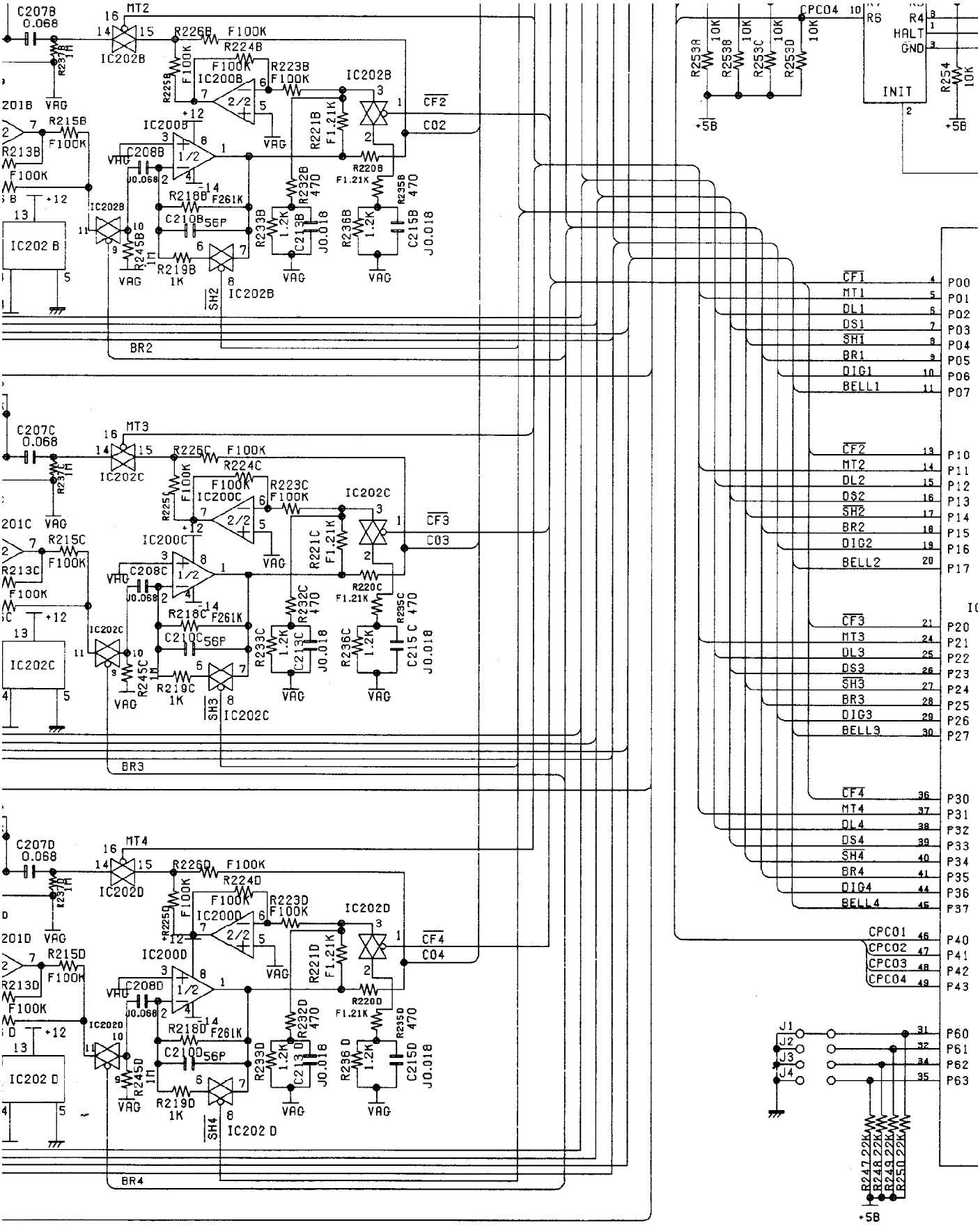

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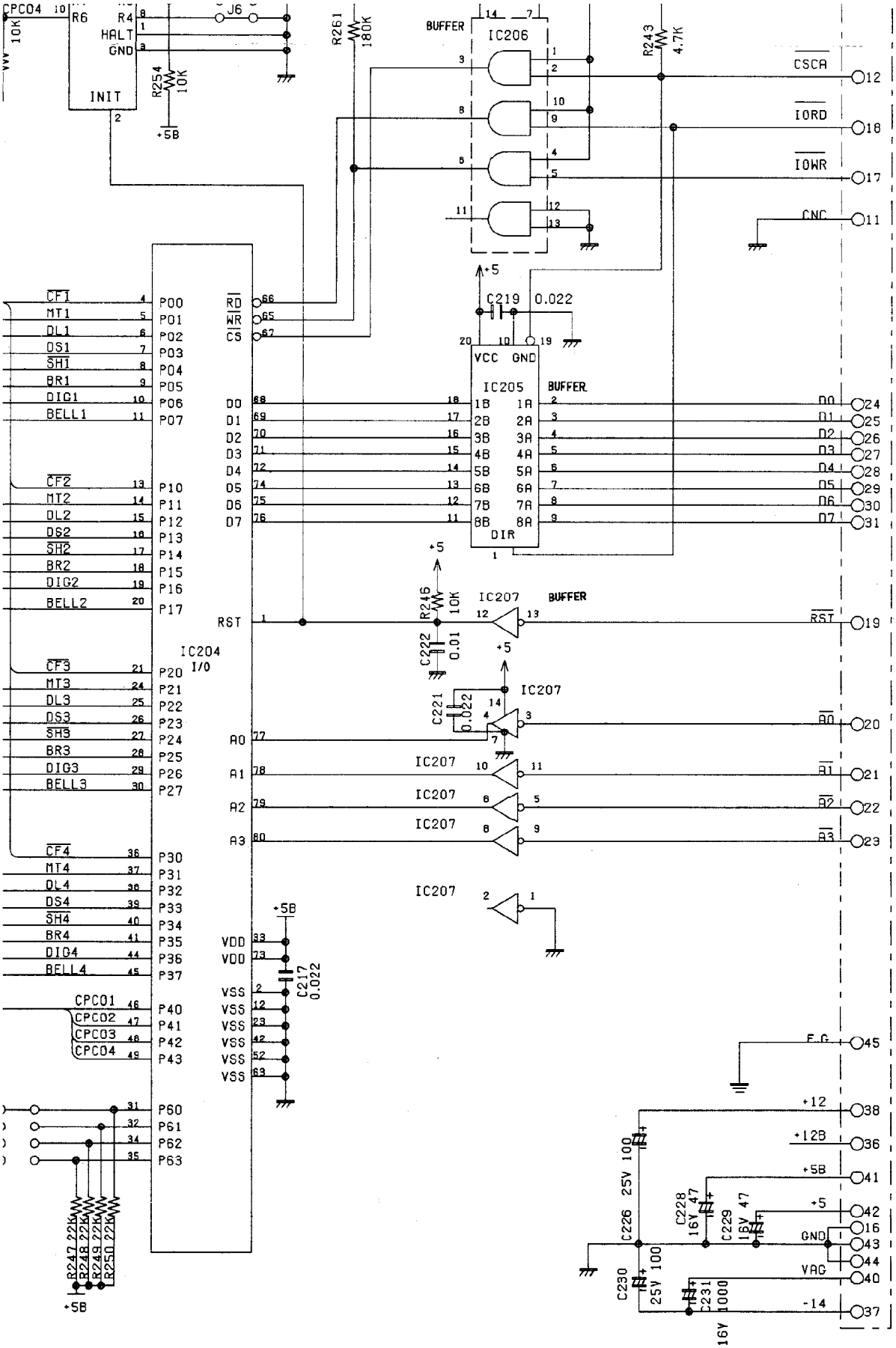
CPC04
R6
10K
R4
HALT
GND
INIT
J6
R254
10K
+5B
R261
180K
BUFFER
IC206
R243
4.7K
CSCA
IORD
IOWR
CNC
+5
C219
0.022
VCC GND
IC205
BUFFER
DIR
CF1
MT1
DL1
DS1
SH1
BR1
DIG1
BELL1
CF2
MT2
DL2
DS2
SH2
BR2
DIG2
BELL2
CF3
MT3
DL3
DS3
SH3
BR3
DIG3
BELL3
CF4
MT4
DL4
DS4
SH4
BR4
DIG4
BELL4
CPC01
CPC02
CPC03
CPC04
IC204
I/O
P00
P01
P02
P03
P04
P05
P06
P07
P10
P11
P12
P13
P14
P15
P16
P17
P20
P21
P22
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P26
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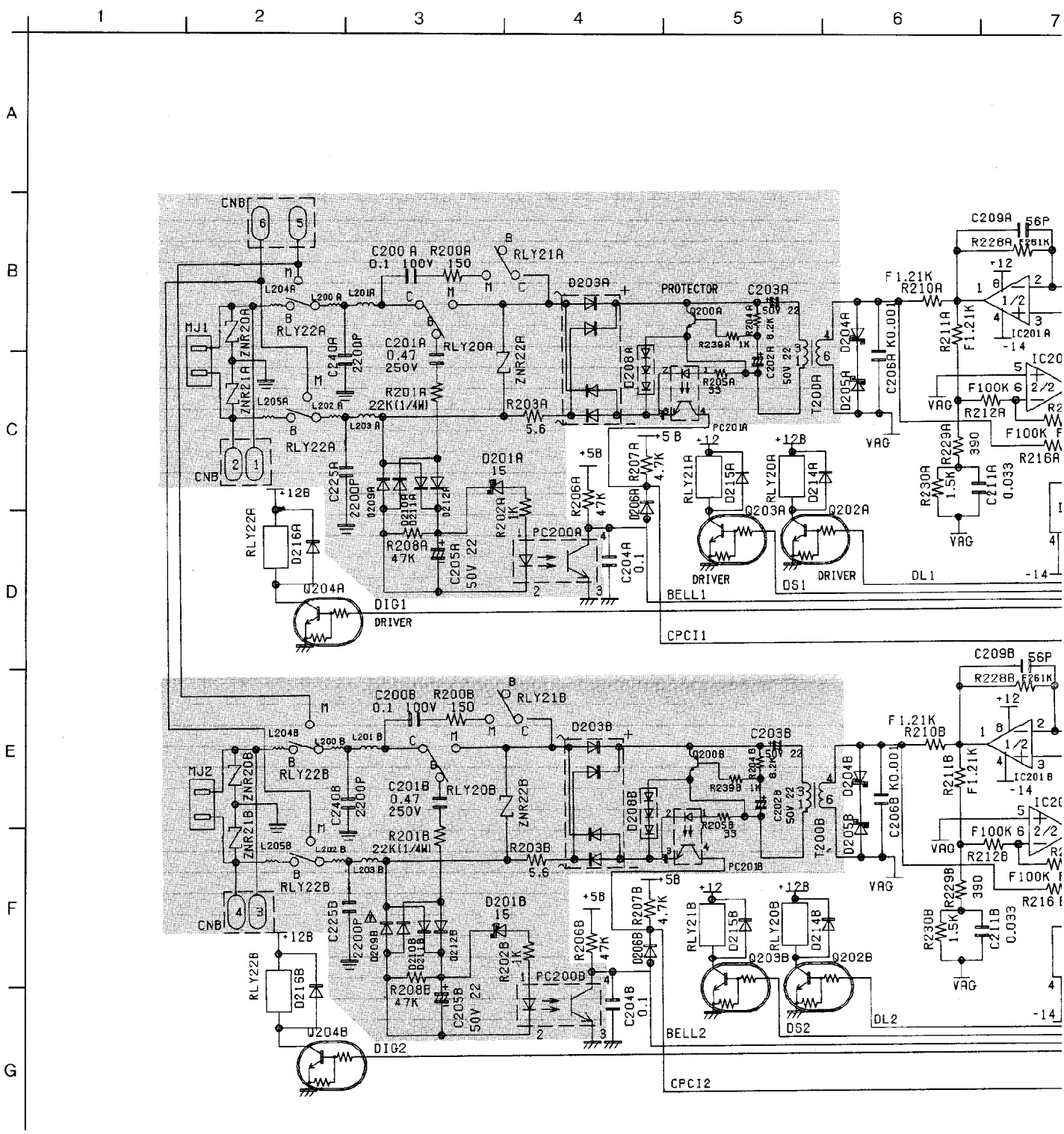
P36
P37
P40
P41
P42
P43
P60
P61
P62
P63
RD
WR
CS
RST
A0
A1
A2
A3
D0
D1
D2
D3
D4
D5
D6
D7
R246
10K
C222
0.01
IC207
C221
0.022
C217
0.022
VDD
VSS
R247 22K
R248 22K
R249 22K
R250 22K
F.G
+12
+12B
+5B
+5
GND
VAG
-14
C226 25V 100
C228 16V 47
C229 16V 47
C230 25V 100
C231 1000 16V



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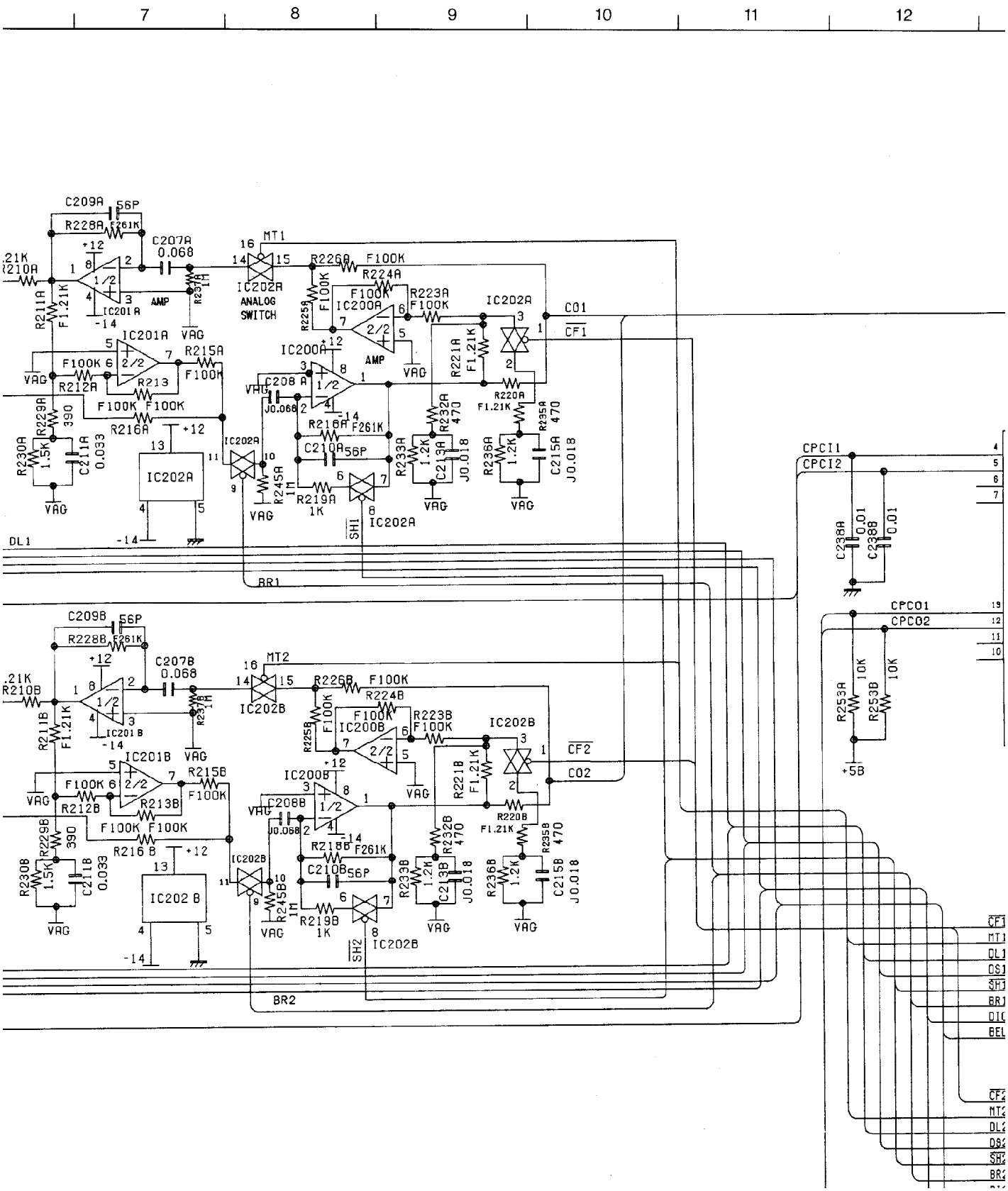
SCHEMATIC DIAGRAM (CO-2)



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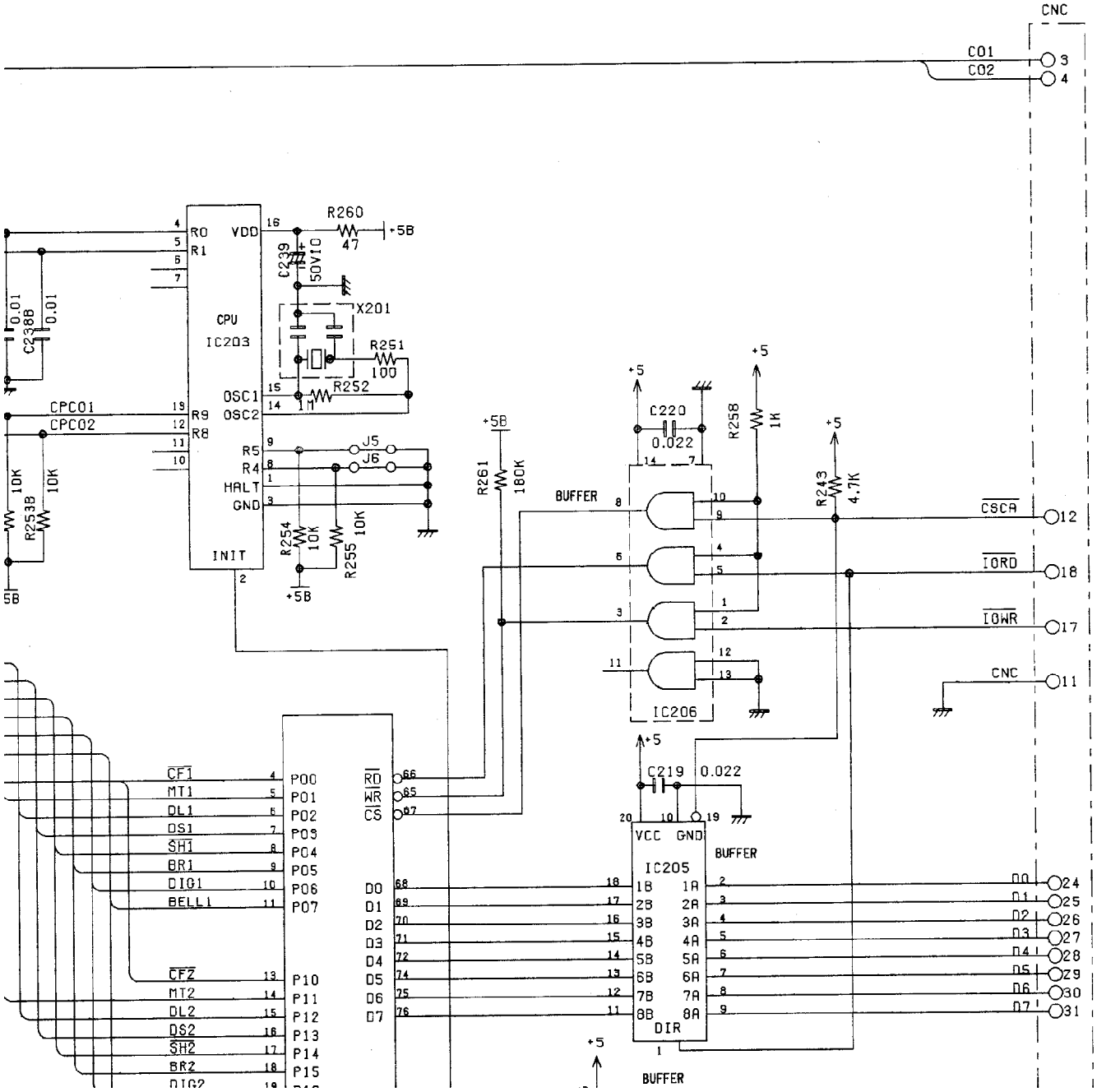

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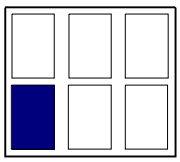

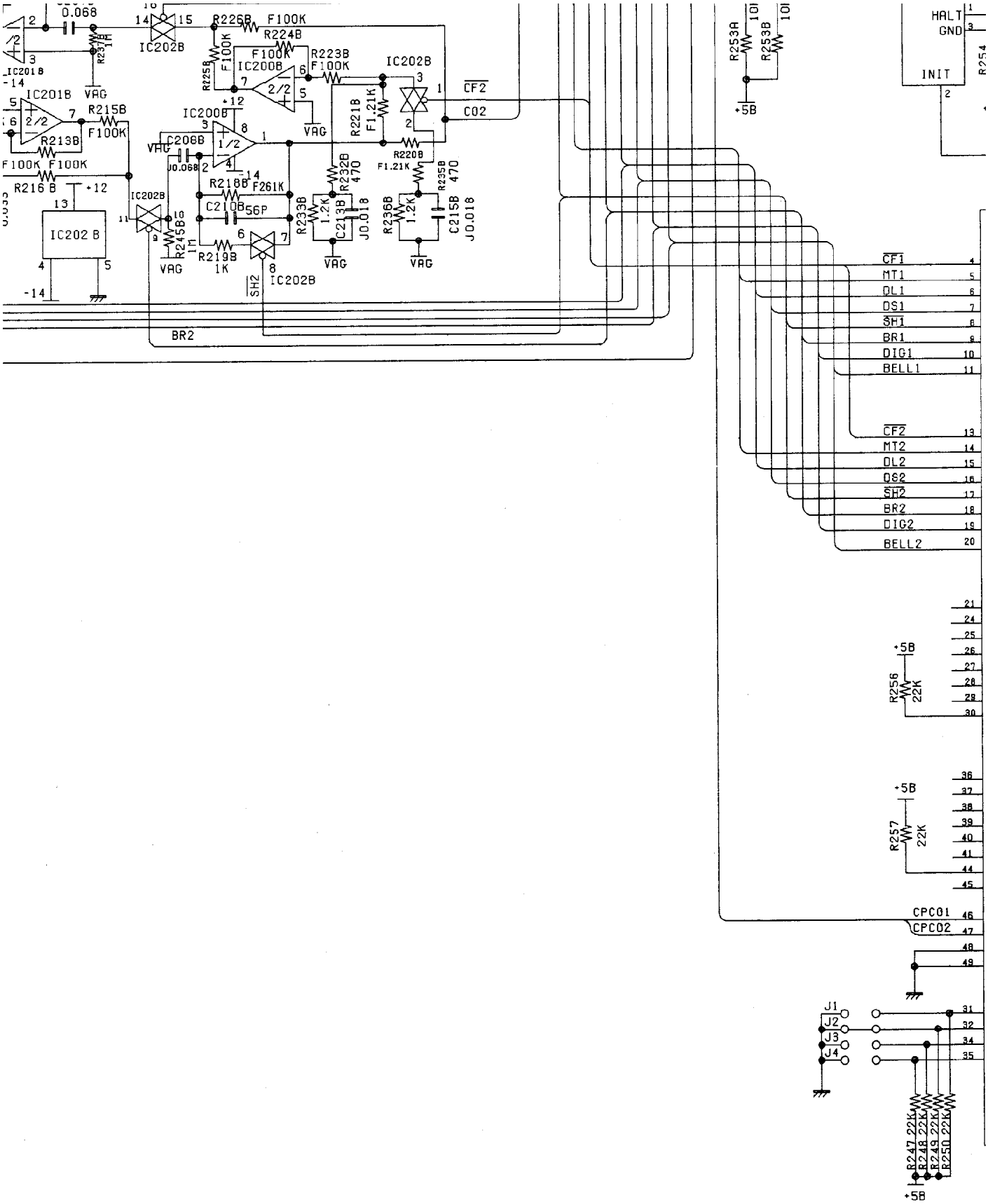

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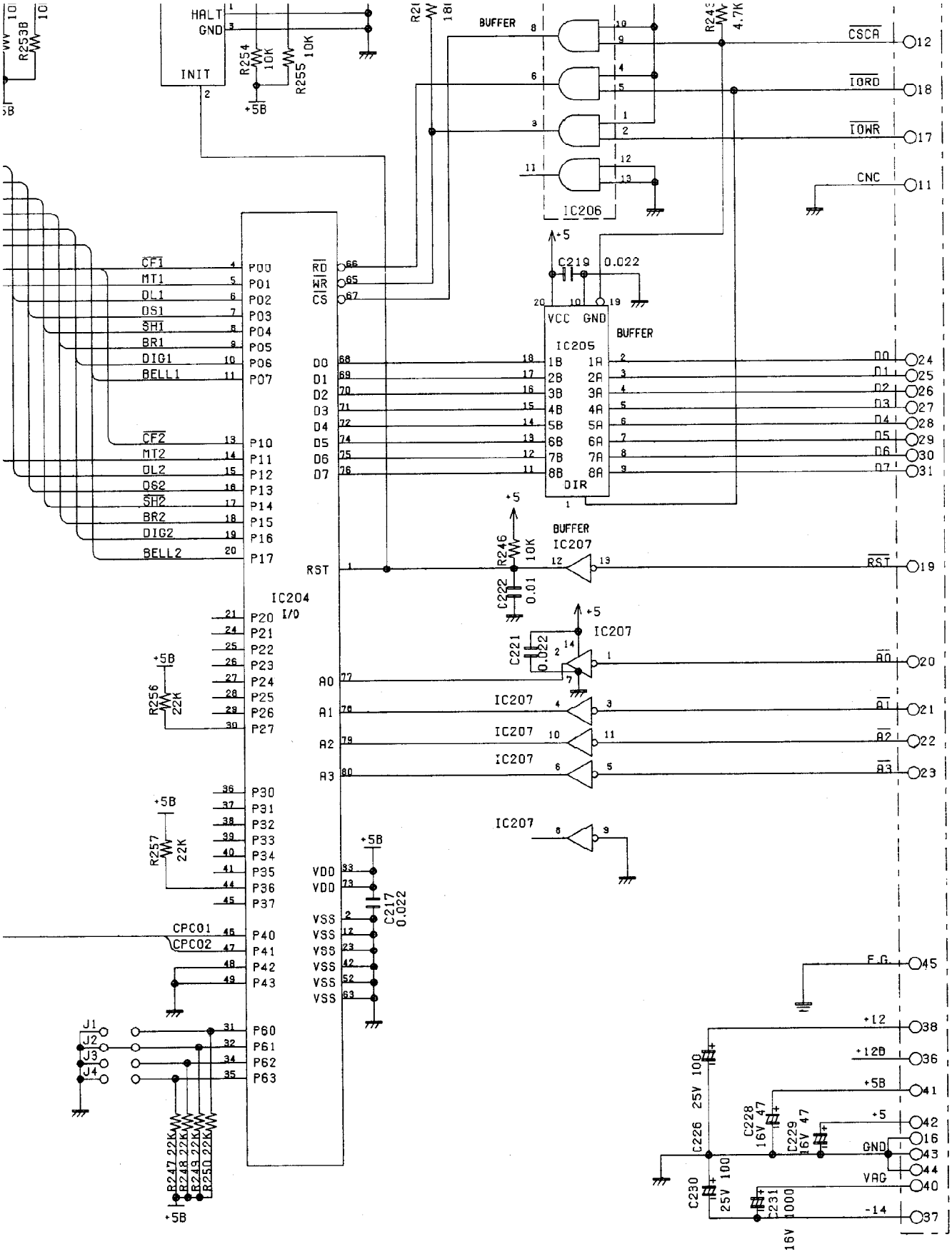

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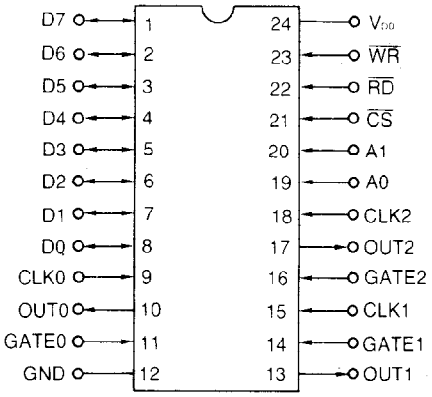
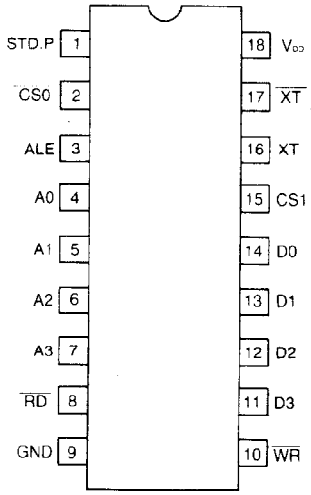
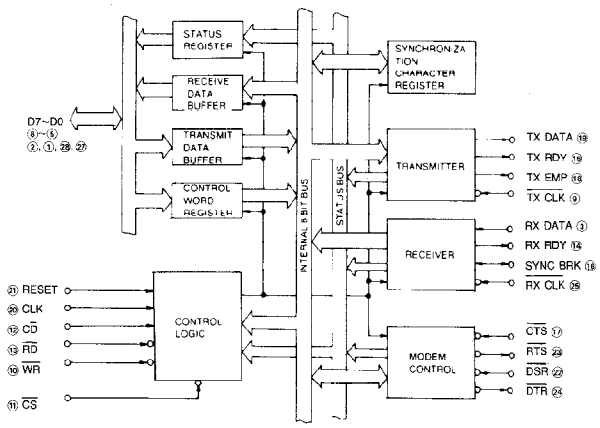
IC120 PQVIPD71054C

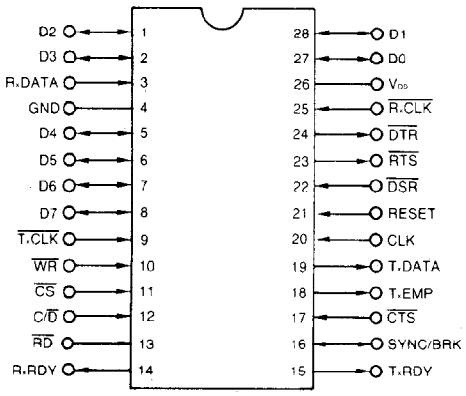


IC127 PQVIMS6242BS

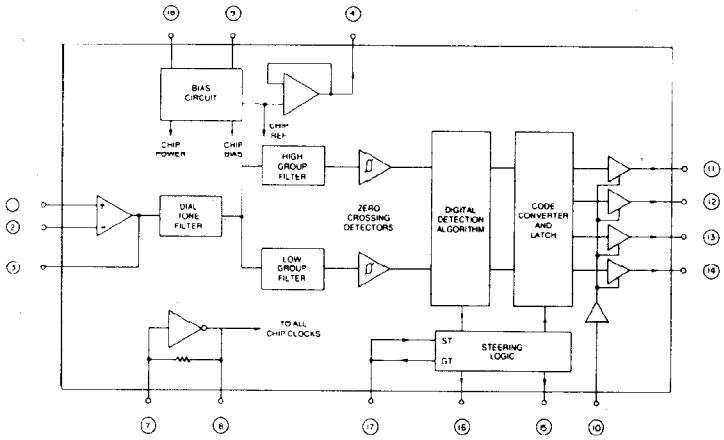


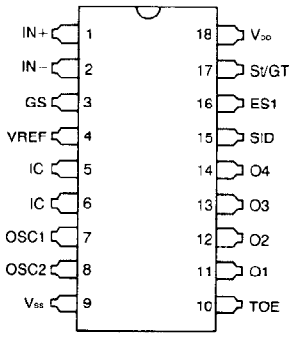
IC121 PQVIPD71051C





IC123, 124, 125 PQVIMT8870BC





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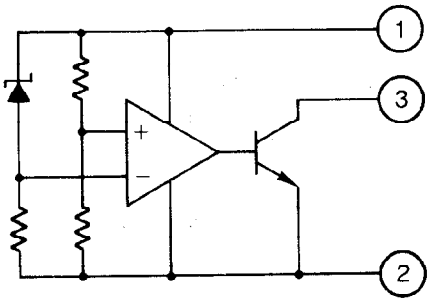
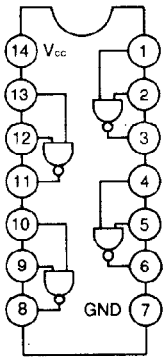
IC129, 141 PQVIPS520C



IC132 PQVIHD75188P



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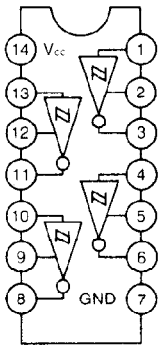
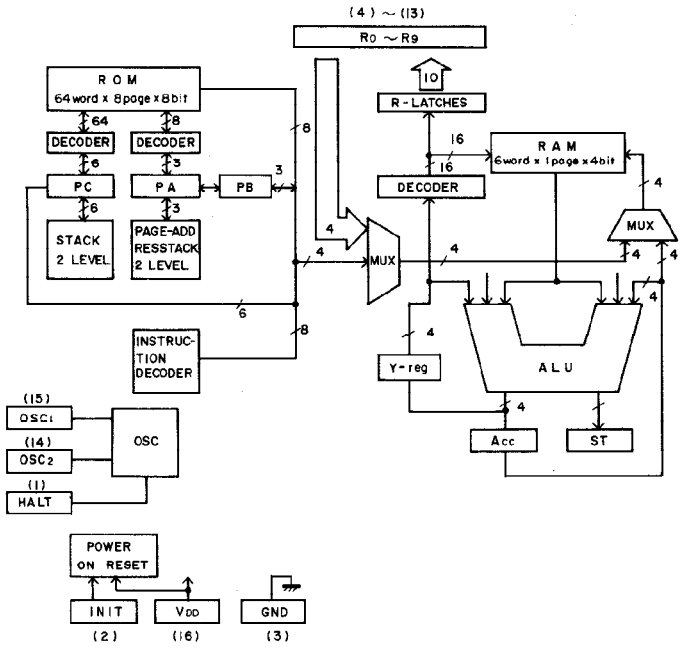
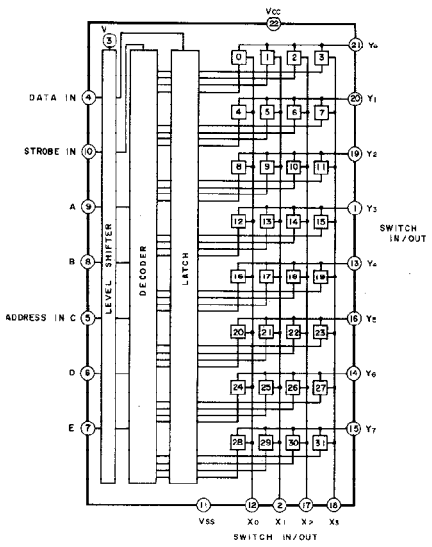


IC142 PQVIBU3140



IC410-445 PQVIM402101P



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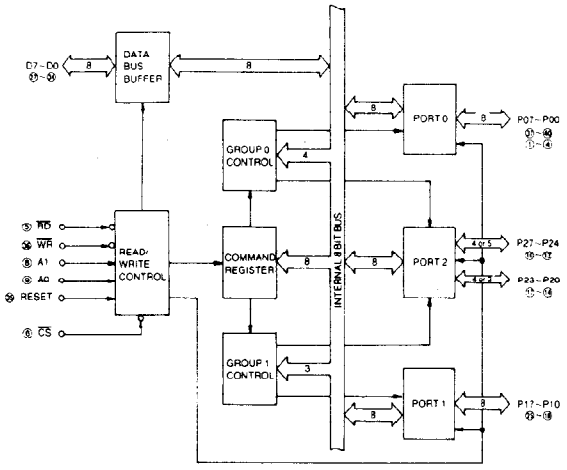
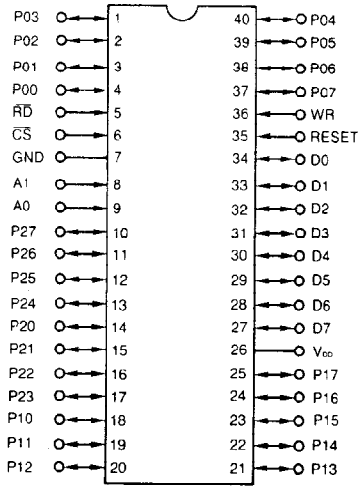
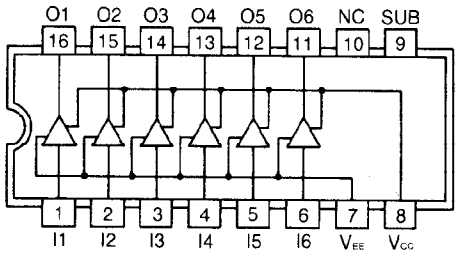
IC400 PQVIPD71055C

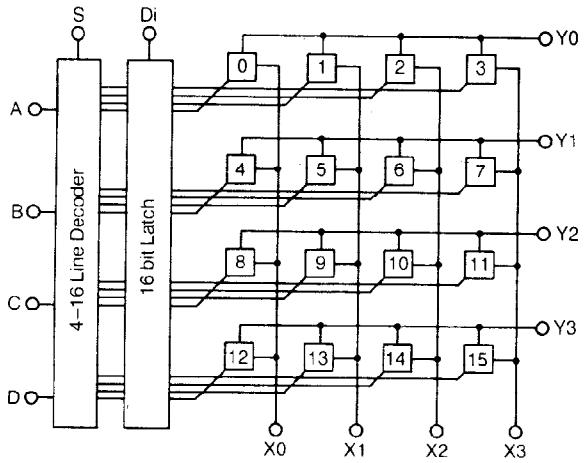




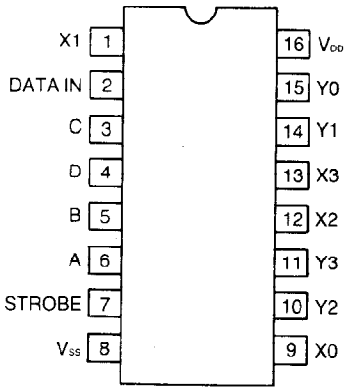
IC406-409 PQVITD62706P



IC447, 448, 450, 451, 453-456 PQVIPD22100C

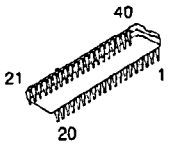


*1–15: Analog Switch



KX-T123210

TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES



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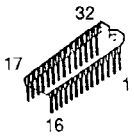
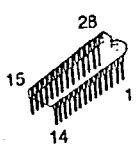
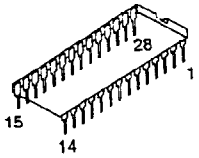


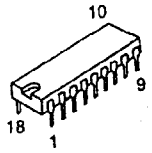
IC101



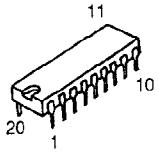
IC102,103,121



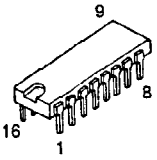
IC104,117



IC105,127



IC106,107,111,112



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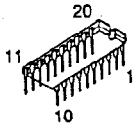
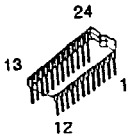
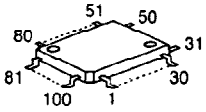
122,142,202A-202D



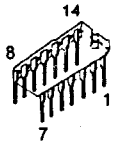
IC109,110,205,303,
305,401



IC115,120



IC116



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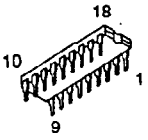
402,403,467



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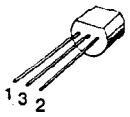

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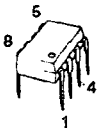

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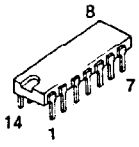
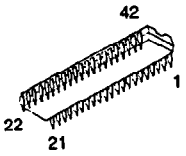
201A-201D,461-466,
468,469



IC134,135136



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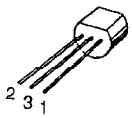
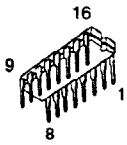


IC404,405



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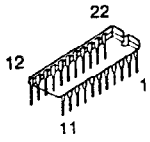
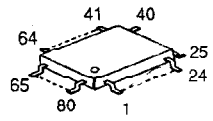
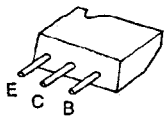
448,450,451,453-456



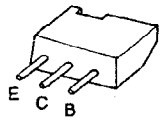
IC410-445



IC204,300



Q50,52



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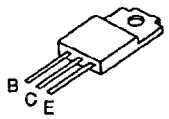
203A-203D,204A-204D,
300A-300H,301A-301H,
302A-302H,303A-303H,
304A-304H,305A-305H,
306A-306H,Q307A-307H,
311A,311B,312A,312B,
400,402,404



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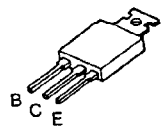

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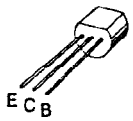
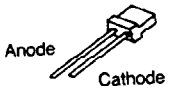
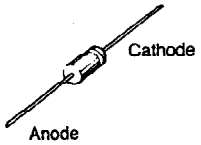


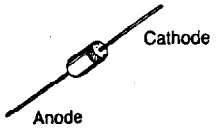
Q401



D10-13



D50,51,55,56
208A-208D



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102-105,107-115,
117-121,203A-203D,
206A-206D

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211A-211D,212A-212D,
214A-214D,215A-215D,
216A-D216D,302H-302H,
305A-305H,308A-308H,
309A-309H,310A-310H,
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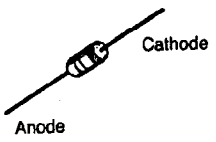
313,314A,314B,438,439
400-435,VD100



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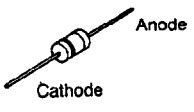
436,437



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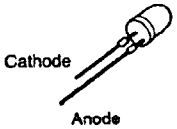

LED1-3

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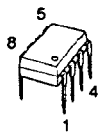
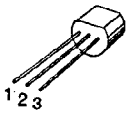
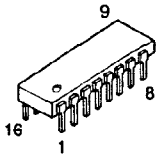
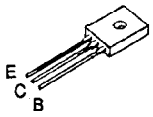
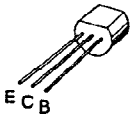
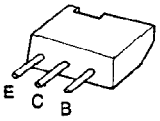
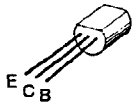
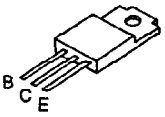
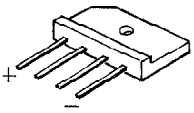
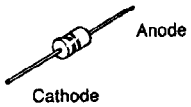
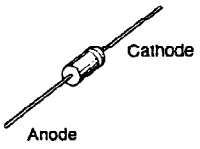
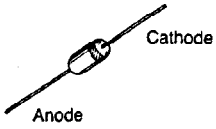
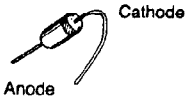
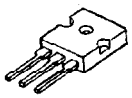
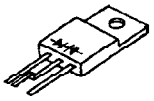
(POWER UNIT SECTION)

 IC101,102	 IC201,206	 IC202,203,204	IC205	 Q101,204,205
 Q102,103,104,201, 206,209,212	 Q105,210,211	 Q202,207	 Q203,208	 D101
 D102,103	 D104,202,205,209,212	 D105,106,109,111, 204,206,208,211	 D108	D110
 D201	 D203,207,210,213			

ADJUSTMENTS

OSCILLATION PERIOD ADJUSTMENT

Perform the following adjustment after replacing IC127.

1. Connect the AC cord to the AC outlet (AC 120V, 60Hz).
2. Set the Power Switch to ON.
3. Remove the rubber part from the System Program Switch and set the System Program Switch to upper position.
   (See Fig. 31)
   (After adjustment, return the System Program Switch to "SET" position and attach the rubber part.)
4. Reciprocal light the Day and Night Indicators.
5. Connect the KX-T123210 and Parsonal Computer (or Data Terminal) by RS-232C cable.
6. Press the Data Key of the Parsonal Computer (or Data Terminal).
7.

```
@ WELCOME TO KX-T123210 EIA PROGRAMING
                VER 1.0 PANASONIC CO. LTD.

@ SELECT MODE        : EDIT MODE.....ED (CR)
                     : SHOW MODE.....SH (CR)

> DIG
```

Picture of Parsonal Computer
(or Print of Data Terminal)

8. Input the DIG and press the Return Key.

9.

```
@ SELECT          : ALL COMPONENTS....ALL (CR)
                  : SYSTEM.....SYS (CR)
                  : X-POINT.....XPT (CR)
                  : CO TRUNK.....COT (CR)
                  : LINE CIRCUIT.....LCT (CR)
                  : PRODUCTION.....PRO (CR)
                  : MODE END.....END (CR)

D> PRO
```

Picture of Parsonal Computer (or Print of Data Terminal)

10. Input the PRO and press the Return Key.
11. Connect the frequency counter. (See Fig. 32)
12. Set the frequency counter to "PERIOD" position.
13. Adjust VC100 for a reading of ( ) msec on the frequency counter.

Room temperature for adjusting (°C)	Period value (msec)	Room temperature for adjusting (°C)	Period value (msec)
14~14.9	15.624943 (±0.00001)	20~20.9	15.624880 (±0.00001)
15~15.9	15.624933 (±0.00001)	21~21.9	15.624876 (±0.00001)
16~16.9	15.624922 (±0.00001)	22~27.9	15.624870 (±0.00001)
17~17.9	15.624910 (±0.00001)	28~28.9	15.624876 (±0.00001)
18~18.9	15.624899 (±0.00001)	29~29.9	15.624880 (±0.00001)
19~19.9	15.624888 (±0.00001)		

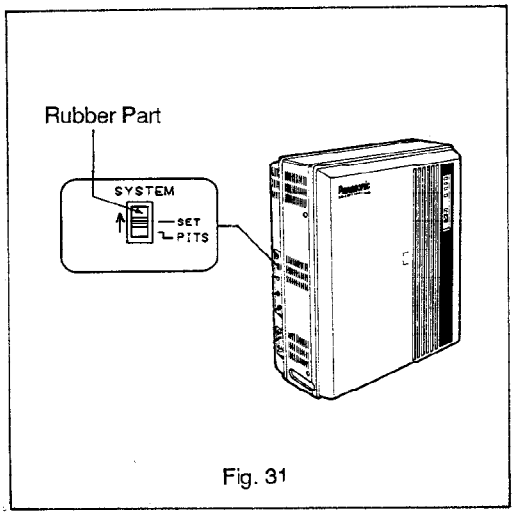


Fig. 31

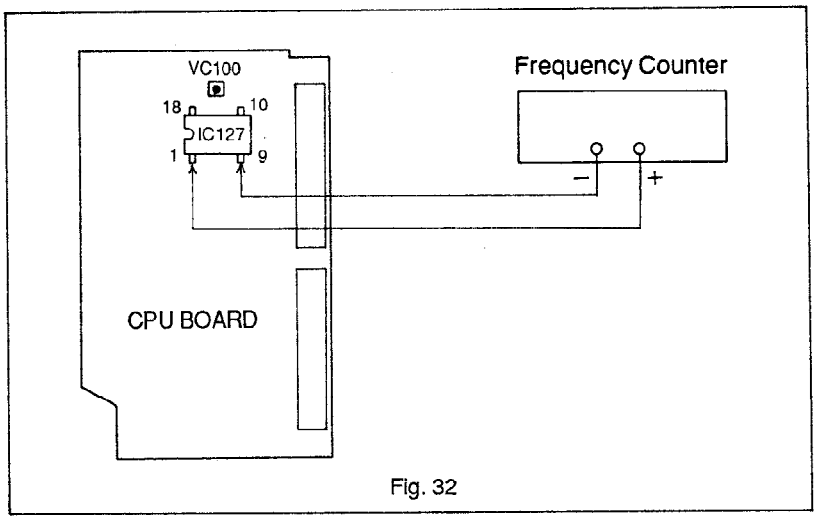


Fig. 32

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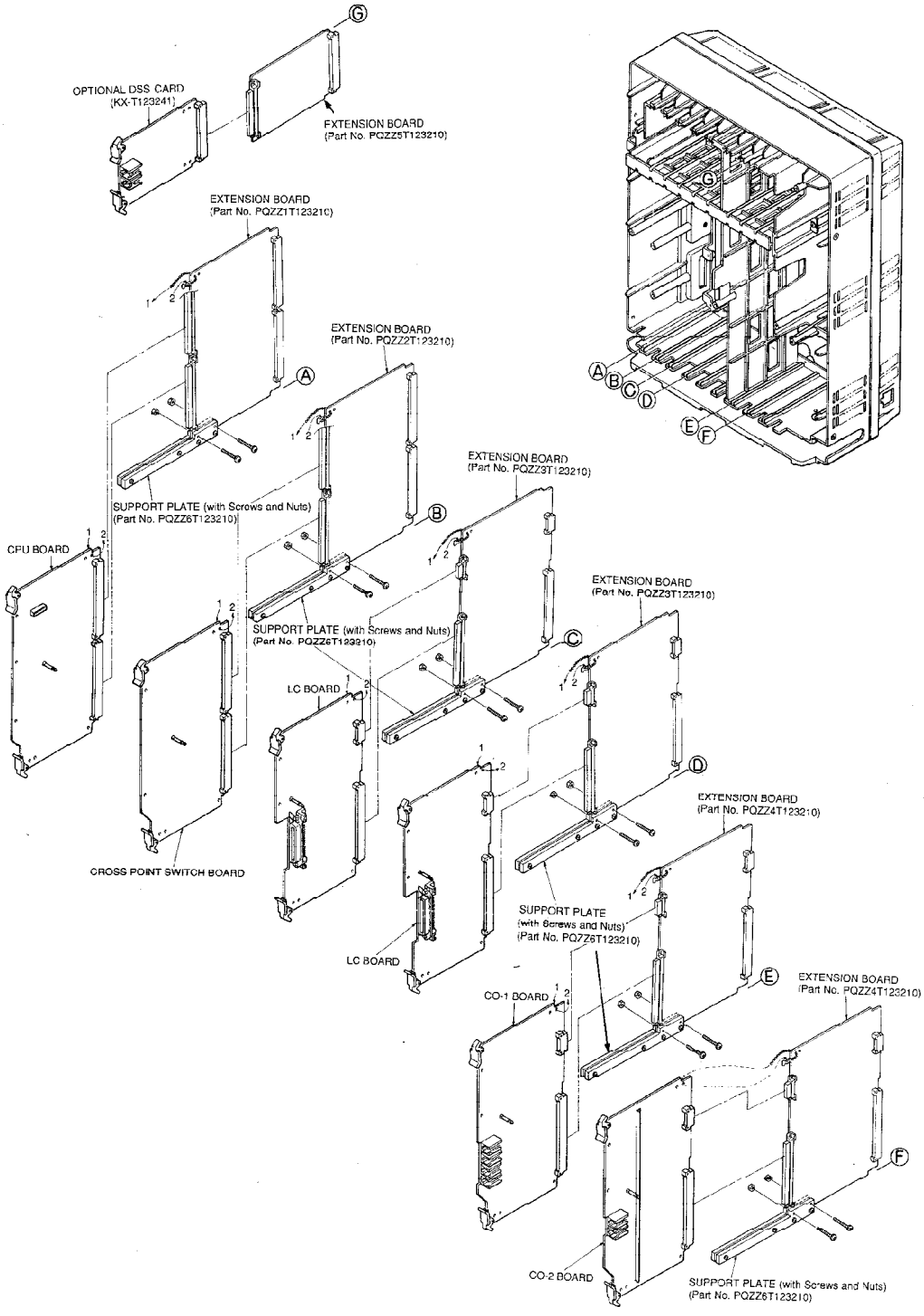
EXTENSION BOARD CONNECTING METHOD



OPTIONAL EXPANSION CARD AND EXTENSION BOARD COMPAISON TABLE		
OPTIONAL EXPANSION CARD	EXTENSION BOARD PART NO.	SUPPORT PLATE PART NO.
KX-T123270 (8 Extensions)	PQZZ3T123210	PQZZ6T123210
KX-T123271 (4 Extensions)	PQZZ3T123210	PQZZ6T123210
KX-T123280 (4 CO's)	PQZZ4T123210	PQZZ6T123210
KX-T123281 (2 CO's)	PQZZ4T123210	PQZZ6T123210

CABINET AND ELECTRICAL PARTS LOCATION

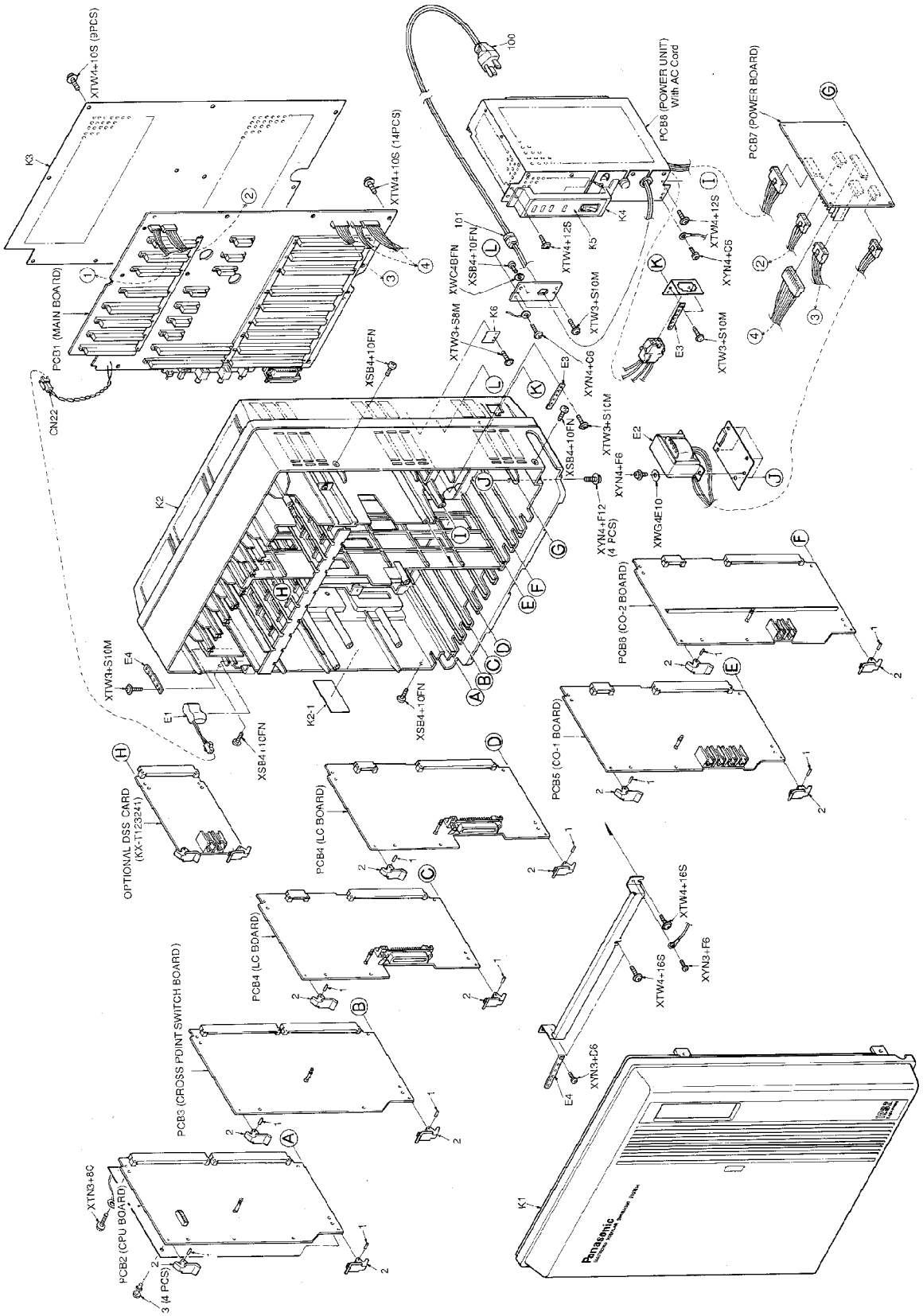


Fig. 33

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POWER UNIT PARTS LOCATION

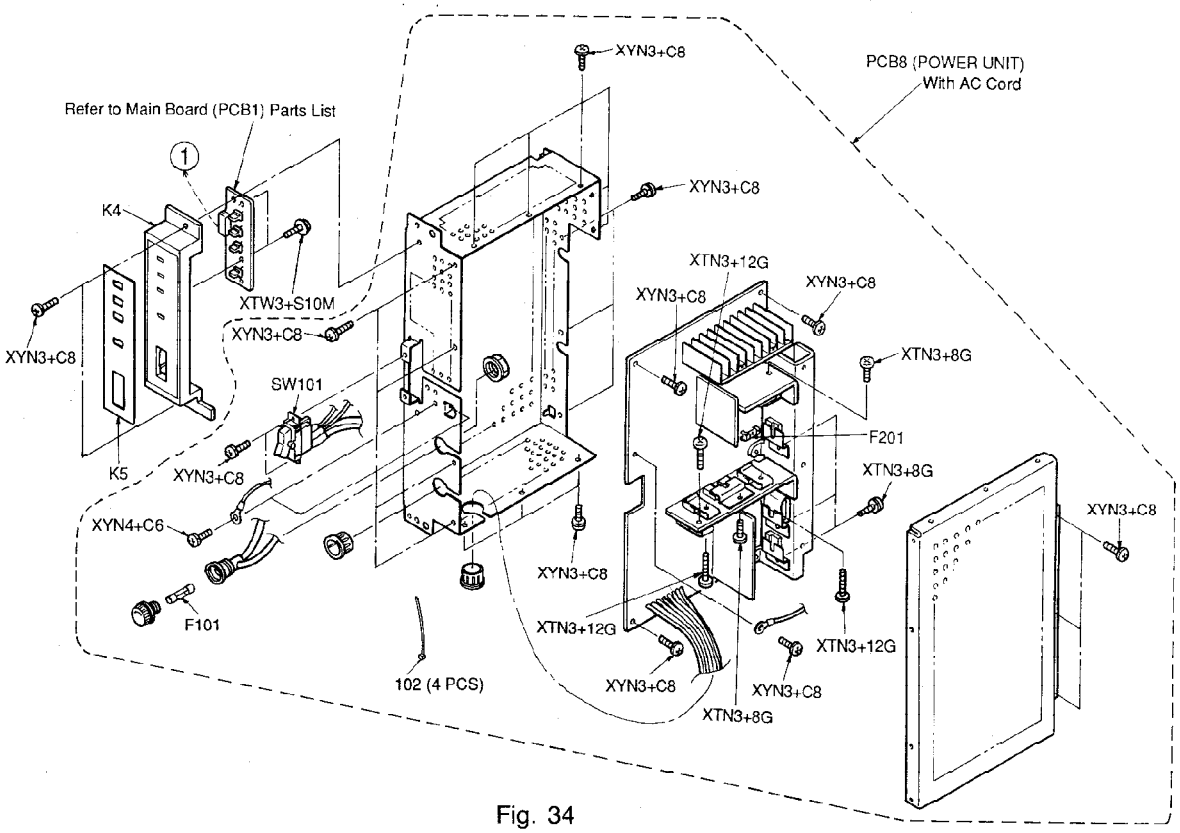

Fig. 34

ACCESSORIES AND PACKING MATERIALS

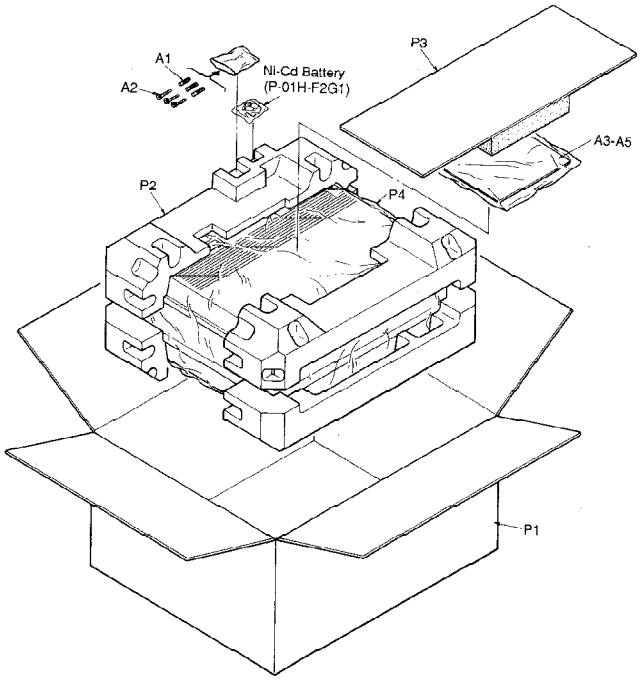

Fig. 35

REPLACEMENT PARTS LIST

Notes: Model KX-T123210

1. Printed circuit board assembly and power unit with mark (NLA) is no longer available afterproduction discontinuation of the complete set.
2. Important safety notice.
   Components identified by the ⚠ mark special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
3. The S mark indicates service standard parts and may differ from production parts.
4. RESISTORS & CAPACITORS
   Unless otherwise specified.
   All resistors are in ohms(Ω) k=1000Ω,M=1000kΩ
   All capacitors are in MICRO FARADS(μF) P= μF
   *Type &Wattage of Resistor
   Type

ERC:Solid	ERX:Metal Film	PQRD:Carbon
ERD:Carbon	ERG:Metal Oxide	PQRQ:Fuse
PQ4R:Chip	ERO:Metal Film	ERF:Wire Wound

Wattage

10,16,18:1/8W	14,25,S2:1/4W	12,50,S1:1/2W	1:1W	2:2W	5:5W

*Type & Voltage of Capacitor
Type

ECFD:Semi-Conductor	ECCD,ECKD,PQCBC,PQVP : Ceramic
ECQS:Styrol	ECQM,ECQV,ECQE,ECQU,ECQB : Polyester
PQCBX,ECUV:Chip	ECEA,ECSZ,ECOS : Electrolytic
ECMS:Mica	ECQP : Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H: 50V	0S: 50V	OF:3.15V	OJ :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :63V
2H:500V		OJ:6.3V	1E,25:25V	2A :100V

Ref. No.	Part No.	Part Name & Description	Pcs
		CABINET & ELECTRICAL PARTS	
K1	PQVFT123210M	Front Cabinet Assembly	1
K2	PQYMT123210M	Cabinet Body Assembly	1
K2-1	PQGT295Z	Name Plate	1
K3	PQYUT123210M	Rear Cover Assembly	1
K4	PQGG52Z	LED Grille	1
K5	PQGK54Z	Indication Plate	1
K6	PQUV66Z	Cover	1
E1	P-01H-F2G1	Ni-Cd Battery	1
E2	PQLT1U9M1A	Bell Transformer	1
E3	RME143Z	Cord Band	2
E4	RME144Z	Cord Band	2
		ACCESSORIES AND PACKING MATERIALS	
A1	PQHE10Z	Curl Plug	3
A2	PQHE5008Z	Screw	3
A3	PQQX5442Z	Installation Manual	1
A4	PQQX5443Z	User Guide	1
A5	PQQX9183Z	Instruction Book (For Additionl Feature)	1
P1	PQPK516Z	Packing Case	1
P2	PQPN9039Z	Pad Complete	1
P3	PQPE101Z	Pad	1
P4	PQPP118Z	Protection Cover (for Unit)	1

Ref. No.	Part No.	Part Name & Description		Pcs
		MAIN BOARD PARTS		
PCB1	PQWP1T123210	Main P.C. Board Ass'y (NLA)		1
		(DIODES)		
D10,13	LN220RPH	LED		2
D11	LN420YPH	LED		1
D12	LN320GPH	LED		1
		(TRANSFORMERS & COILS)		
T1,2,3	PQLT2D6B	Transformer		3
L1,2,4, L5,7-9, L11,13	PQLQZM2R2M	Choke Coil		9
L3,6	PQLQZM4R7K	Choke Coil	S	2
		(SWITCHES)		
SW	EVQQJH12T	Switch, Reset		1
SW	PQSS3A14Z	Switch, Mode		1
		(RESISTORS)		
R1-14	ERD16TJ103	10k		14
R15-17	ERD16TJ821	820		3
R19-22	ERD16TJ821	820		4
		(JACKS & CONNECTORS)		
JA1,2	PQJJ1E1Y	Jack, Paging		2
JA3	RJJ19Y	Jack, Earphone		1
CN1-3, 6A-6D, 8A-8C	PQJS45S30Z	Connector, 45P		10
CN5A-5D,7A-7C	PQJS8S32Z	Connector, 8P		7
CN9, CN10A, 10B,11	PQJS64S30Z	Connector, 64P		4
CN12-CN5	PQJS50S33Z	Connector, 50P		4
CN4	PQJS90S30Z	Connector, 90P		1
CN16	PQJS5R31Z	Connector, 5P		1
CN17	PQJS5R32Z	Connector, 5P		1
CN18	PQJS6R31Z	Connector, 6P		1
CN19, CN20	PQJS10R31Z	Connector, 10P		2
CN21	PQJS25P31Z	Socket, EIA		1
CN22	PQJS2L44Z	Connector, 2P		1
J26	PQJP5D13Z	Connector, 5P		1
		CPU BOARD PARTS		
PCB2	PQWP2T123210	CPU P.C. Board Ass'y (NLA)		1
		(ICs)		
IC100	PQVIMS80C88	IC		1
IC101/ IC104	PQWIT123210M	IC (ROM Kit)		1
IC102	PQVIPD83257C	IC	S	1
IC103	PQVIHM62256L	IC	S	1
IC105	PQVIMS8C84A2	IC	S	1
IC106	PQVIM7H245P	IC		1
IC107	PQVIM7H245P	IC		1
IC108	PQVIM7H174P	IC		1
IC109	PQVIHD7L640P	IC		1
IC110	PQVIHD7L240P	IC		1
IC111	PQVIM7H373P	IC		1
IC112	PQVIM7H373P	IC		1
IC113	PQVIM7H137P	IC		1
IC114	PQVIHD7L138P	IC		1
IC115	PQVIHD7L154P	IC		1
IC116	PQVI63HB110	IC		1
IC117	PQVIMS8C59A2	IC	S	1
IC118	PQVIM7H107P	IC		1
IC119	PQVITC7H138P	IC	S	1
IC120	PQVIPD71054C	IC	S	1
IC121	PQVIPD71051C	IC	S	1

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Ref. No.	Part No.	Part Name & Description		Pcs
IC122	PQVILR4089	IC		1
IC123, IC124, IC125	PQVIMT8870BC	IC		3
IC126	Not Used			
IC127	PQVIMS6242BS	IC		1
IC128	Not Used			
IC129	PQVIPS520C	IC		1
IC130	Not Used			
IC131	PQVINJM4558D	IC		1
IC132	PQVIHD75188P	IC		1
IC133	PQVIHD75189P	IC		1
IC134	PQVIM7H32P	IC		1
IC135	PQVIM7H02P	IC		1
IC136	PQVITC7H00P	IC	S	1
IC137	PQVITC7H04P	IC	S	1
IC138	PQVIHD7LS04P	IC		1
IC139	PQVITC7H04P	IC	S	1
IC140	PQVITC7H04P	IC	S	1
IC141	PQVIPS520C	IC		1
IC142	PQVIBU3140	IC		1
		(TRANSISTORS)		
Q100-Q103	DTC124EA	Transistor (Si)		4
Q104	Not Used			
Q105	2SC2021	Transistor (Si)		1
Q106	2SA937	Transistor (Si)		1
Q107	DTC124EA	Transistor (Si)		1
Q108	DTA124EA	Transistor (Si)		1
Q109	DTA124EA	Transistor (Si)		1
Q110	DTC124EA	Transistor (Si)		1
Q111	DTA143XA	Transistor (Si)		1
		(DIODES)		
D100	MA4091	Diode (Si)		1
D101	MA4130	Diode (Si)		1
D102-D104	1SS131	Diode (Si)		3
D105	Not Used			
D106	Not Used			
D107-D115	1SS131	Diode (Si)		9
D116	Not Used			
D117-D121	1SS131	Diode (Si)		5
VD100	PQVD1SV124	Diode (Si)		1
		(TRIMMER)		
VC100	PQCVTZB30B	Trimmer		1
		(COMPONENT COMBINATIONS)		
CA101	PQXF4WB04	Capacitor Array		1
Z108	EXBP84103K	Resistor Array	S	1
		(CRYSTAL OSCILLATORS)		
X100	PQWET123210M	Crystal Oscillator Assembly		1
X101	Not Used			
X102	PQVCX3579H5R	Crystal Oscillator		1
X103	PQVCL3276N4Z	Crystal Oscillator		1
		(THERMISTERS)		
TH100	PQRRTS104U	Thermister		1
TH101	PQRRTS203U	Thermister		1
		(COILS)		
L100-L103	PQLQZM1R5M	Choke Coil		4
L104	PQLQZM2R2M	Choke Coil		1
L105	PQLQZM2R2M	Choke Coil		1

Ref. No.	Part No.	Value	Pcs
		(RESISTORS)	
R68	ERD16TJ220	22	1
R69-72	ERD16TJ103	10k	4
R83	ERD16TJ101	100	1
R74	ERD16TJ221	220	1
R75-77	ERD16TJ151	150	3
R78	ERD16TJ101	100	1
R79-88	ERD16TJ103	10k	10
R89	ERD16TJ104	100k	3
R90,91	ERD16TJ124	120k	2
R92,93	ERD16TJ223	22k	2
R94	ERD16TJ103	10k	1
R95	ERD16TJ223	22k	1
R96	ERD16TJ103	10k	1
R97	Not Used		
R98,99	ERD16TJ103	10k	2
R100	ERD16TJ683	68k	1
R101	ERD16TJ103	10k	1
R102	ERD16TJ103	10k	1
R103-R106	ERD16TJ102	1k	4
R107	ERD16TJ103	10k	1
R108	ERD16TJ103	10k	1
R109	ERD16TJ471	470	1
R110	ERD16TJ472	4.7k	1
R111	ERD16TJ223	22k	1
R112	ERD16TJ683	68k	1
R113	ERD16TJ471	470	1
R114	ERD16TJ472	4.7k	1
R115	ERD16TJ223	22k	1
R116-R119	ERD16TJ103	10k	4
R120-R122	ERD16TJ223	22k	3
R123-R140	ERD16TJ103	10k	18
R141-R146	ERD16TJ102	1k	6
R147-R152	ERD16TJ103	10k	6
R153-R156	ERD16TJ102	1k	4
R157-R159	ERD16TJ103	10k	3
R160-R163	ERD16TJ183	18k	4
R164	ERD16TJ103	10k	1
R165	ERD16TJ184	18k	1
R166	ERD16TJ183	18k	1
R167	ERD16TJ394	390k	1
R168	ERD16TJ103	10k	1
R169	ERD16TJ183	18k	1
R170	ERD16TJ103	10k	1
R171	ERD16TJ333	33k	1
R172-R175	ERD16TJ103	10k	4
R176	ERD16TJ154	150k	1
R177	ERD16TJ105	1M	1
R178	ERD16TJ223	22k	1
R179	ERD16TJ223	22k	1
R180	ERD16TJ472	4.7k	1
R181	ERD16TJ104	100k	1
R182	ERD16TJ333	33k	1
R183	ERD16TJ334	330k	1
R184	ERD16TJ104	100k	1
R185	ERD16TJ333	33k	1
R186	ERD16TJ334	330k	1
R187	ERD16TJ104	100k	1
R188	ERD16TJ333	33k	1
R189	ERD16TJ334	330k	1
R190-R199	ERD16TJ103	10k	10

Ref. No.	Part No.	Value, Part Name & Description		Pcs
		(CAPACITORS)		
C100	ECEA1HU4R7	4.7		1
C101	ECEA1HU100	10	S	1
C102	Not Used			
C103	ECEA1HU100	10	S	1
C104	ECEA1HU100	10		1
C105	ECEA1CSS102	1000		1
C106	ECEA1HN3R3S	3.3		1
C107-C109	ECEA1HU100	10	S	3
C110	ECEA1EU470	47	S	1
C111	ECEA1EU470	47	S	1
C112-C119	Not Used			
C120	ECQV1H104JZ	0.1		1
C121	ECQV1H104JZ	0.1		1
C122	Not Used			
C123	Not Used			
C124	ECCD1H150JC	150P		1
C125	ECCD1H150JC	150P		1
C126	Not Used			
C127	Not Used			
C128	Not Used			
C129	ECQM1H472JV	0.0047		1
C130	ECFD1C104MD	0.1		1
C131	ECQV1H104JZ	0.1		1
C132	ECFD1C104MD	0.1		1
C133	ECQV1H104JZ	0.1		1
C134	ECFD1C104MD	0.1		1
C135	ECQV1H104JZ	0.1		1
C136	Not Used			
C137	Not Used			
C138	ECFD1C104MD	0.1		1
C139	ECKD1H103MD	0.01		1
C140	Not Used			
C141	ECKD1H103MD	0.01		1
C142	ECKD1H102KB	0.001		1
C143	ECKD1H102KB	0.001		1
C144-C149	Not Used			
C150-C153	ECKD1H223MD	0.022		4
C154	Not Used			
C155	ECKD1H223MD	0.022		1
C156	ECKD1H223MD	0.022		1
C157	Not Used			
C158-C161	ECKD1H223MD	0.022		4
C162-C165	Not Used			
C166-C175	ECKD1H223MD	0.022		10
C176	Not Used			
C177	ECEA1EU470	47	S	1
C178	Not Used			
C179	ECKD1H223MD	0.022		1
C180	Not Used			
C181	ECKD1H223MD	0.022		1
C182	Not Used			
C183	ECKD1H223MD	0.022		1
C184	ECKD1H223MD	0.022		1
C185-C189	Not Used			
C190	ECKD1H223MD	0.022		1
C191	ECKD1H223MD	0.022		1
C192-C196	Not Used			
C197	ECCD1H150JC	15P		1
C198	ECCD1H150JC	15P		1
C199	ECEA1EU470	47		1
		(OTHERS)		
1	PQDF996Z	Shaft		2
2	PQUB11Z	Palstic Parts, Latch		2
3	PQME52Z	Plastic Parts, Stopper		4
CNA	PQJP14D49Z	Connector, 14P		1
CN1,2	PQJP45S30Z	Connector, 45P		2

Ref. No.	Part No.	Value, Part Name & Description		Pcs
		CROSS POINT SWITCH BOARD PARTS		
PCB3	PQWP3T123210	Cross Point Switch P.C. Board Ass'y (NLA)		1
		(ICs)		
IC400	PQVIPD71055C	IC	S	1
IC401	PQVIHD7L640P	IC		1
IC402	PQVIHD7LS04P	IC		1
IC403	PQVIHD7LS08P	IC		1
IC404	AN78L07	IC		1
IC405	AN79L07	IC		1
IC406-IC409	PQVITD62706P	IC		4
IC410-IC445	PQVIM402101P	IC		36
IC446	Not Used			
IC447	PQVIPD22100C	IC	S	1
IC448	PQVIPD22100C	IC	S	1
IC449	Not Used			
IC450	PQVIPD22100C	IC	S	1
IC451	PQVIPD22100C	IC	S	1
IC452	Not Used			
IC453-IC456	PQVIPD22100C	IC	S	4
IC457-IC460	Not Used			
IC461-IC466	PQVINJM4558D	IC		6
IC467	PQVIPD4066BC	IC		1
IC468	PQVINJM4558D	IC		1
IC469	PQVINJM4558D	IC		1
		(TRANSISTORS)		
Q400	2SC2021	Transistor (Si)		1
Q401	2SC2878	Transistor (Si)		1
Q402	DTC124EA	Transistor (Si)		1
Q403	Not Used	Transistor (Si)		
Q404	DTA124EA	Transistor (Si)		1
		(DIODES)		
D400-D435	1SS131	Diode (Si)		36
D436	MA4047	Diode (Si)		1
D437	MA4047	Diode (Si)		1
D438	1SS131	Diode (Si)		1
D439	1SS131	Diode (Si)		1
		(COMPONENT COMBINATIONS)		
Z400-Z403	EXBP86103K	Resistor Array	S	4
		(TRANSFORMER)		
T400	ETA14Y85AY	Transformer		1
		(RESISTORS)		
R400	ERD16TJ103	10k		1
R401	ERD16TJ103	10k		1
R402	Not Used			
R403	ERO16CKF1180	118		1
R404-R424	ERD16TJ103	10k		21
R425-R427	ERD16TJ472	4.7k		3
R428	ERD16TJ223	22k		1
R429	Not Used			
R430-R460	ERO16CKF1180	118		31
R461-R492	ERO16CKF1021	1.02k		32
R493-R504	ERO16CKF1430	143		12
R505-R516	ERO16CKF1001	1k		12

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Ref. No.	Part No.	Value		Pcs
R517	ERO16CKF1151	1.15k		1
R518	ERO16CKF1151	1.15k		1
R519	Not Used			
R520	Not Used			
R521	ERO16CKF3401	3.4k		1
R522	ERO16CKF3401	3.4k		1
R523-R527	ERO16CKF3921	3.92k		5
R528	ERD16TJ104	100k		1
R529	ERD16TJ223	22k		1
R530	ERD16TJ333	33k		1
R531	ERD16TJ333	33k		1
R532	ERD16TJ102	1k		1
R533	ERD16TJ102	1k		1
R534	ERD16TJ222	2.2k		1
R535	ERD16TJ223	22k		1
R536	ERD16TJ333	33k		1
R537	ERD16TJ222	2.2k		1
R538	ERD16TJ223	22k		1
R539	ERD16TJ333	33k		1
R540	ERD16TJ332	3.3k		1
R541	ERD16TJ472	4.7k		1
R542	ERD16TJ222	2.2k		1
R543	ERD16TJ472	4.7k		1
R544	ERD16TJ334	330k		1
R545	ERD16TJ333	33k		1
R546	ERD16TJ103	10k		1
R547	ERD16TJ153	15k		1
R548	ERD16TJ103	10k		1
R549	ERD16TJ681	680		1
R550	ERD16TJ681	680		1
R551	ERD16TJ332	3.3k		1
R552	ERD16TJ683	68k		1
R553	ERD16TJ823	82k		1
R554	ERD16TJ224	220k		1
R555	ERD16TJ474	470k		1
R556	ERD16TJ563	56k		1
R557	ERD16TJ184	180k		1
R558	ERD16TJ823	82k		1
R559	ERD16TJ683	68k		1
R560	ERD16TJ823	82k		1
R561	ERD16TJ224	220k		1
R562	ERD16TJ823	82k		1
R563	ERD16TJ474	470k		1
R564	ERD16TJ184	180k		1
R565	ERD16TJ563	56k		1
R566-R569	Not Used			
R570	ERD16TJ102	1k		1
R571	ERD16TJ102	1k		1
R572-R574	ERD16TJ104	100k		3
R575	ERD16TJ332	3.3k		1
R576	ERD16TJ102	1k		1
R577-R583	Not Used			
R584	ERD16TJ563	56k		1
R585	Not Used			
R586	ERD16TJ183	18k		1
R587	Not Used			
R588	ERD16TJ103	10k		1
R589	ERD16TJ103	10k		1
		(CAPACITORS)		
C400	Not Used			
C401	Not Used			
C402	ECEA1EU470	47	S	1
C403	ECEA1EU470	47	S	1
C404	ECEA1HU220	22	S	1
C405	ECEA1HU220	22	S	1
C406	ECEA1HN2R2S	2.2		1
C407	ECEA1EU101	100	S	1
C408	Not Used			
C409	ECQM1H222JV	0.0022		1
C410	ECKD1H223MD	0.022		1
C411	Not Used			
C412	Not Used			

Ref. No.	Part No.	Value, Part Name & Description		Pcs
C413	ECKD1H223MD	0.022		1
C414	Not Used			
C415	Not Used			
C416	Not Used			
C417	ECKD1H102KB	0.001		
C418	Not Used			
C419	Not Used			
C420	ECQM1H102JV	0.001		1
C421	ECQM1H102JV	0.001		1
C422-C426	ECQV1H273JZ	0.027		5
C427	ECKD1H102KB	0.001		1
C428	ECKD1H332KB	0.0033		1
C429	ECKD1H102KB	0.001		1
C430	ECKD1H332KB	0.0033		1
C431	ECFD1C104MD	0.1		1
C432	ECFD1C104MD	0.1		1
C433	ECKD1H332KB	0.0033		1
C434	ECQV1H333JZ	0.033		1
C435	Not Used			
C436	Not Used			
C437	Not Used			
C438-C441	ECQM1H222JV	0.0022		4
C442	ECFD1C104MD	0.1		1
C443	ECQV1H683JZ	0.068		1
C444	ECFD1C104MD	0.1		1
C445	ECQV1H473JZ	0.047		1
C446	Not Used			
C447	ECKD1H223MD	0.022		1
C448	ECKD1H223MD	0.022		1
C449	Not Used			
C450	ECKD1H103MD	0.01		1
C451	ECKD1H223MD	0.022		1
C452	Not Used			
C453-C456	ECKD1H223MD	0.022		4
C457	Not Used			
C458-C464	ECKD1H223MD	0.022		7
C465	ECEA1CSS102	1000		1
C466-C469	Not Used			
C470	ECKD1H102KB	0.001		1
C471	ECKD1H102KB	0.001		1
		(OTHERS)		
1	PQDF996Z	Shaft		2
2	PQUB11Z	Plastic Parts, Latch		2
CN3	PQJP45S30Z	Connector, 45P		1
CN4	PQJP90S30Z	Connector, 90P		1
		LC (1,2) BOARD PARTS		
PCB4	KX-T123270	LC P.C. Board Ass'y (NLA) (Supply by business route)		2
		(ICs)		
IC300	PQVI671152F	IC		1
IC301	PQVIHD7LS08P	IC		1
IC302	PQVIHD7LS06P	IC		1
IC303	PQVIHD7L640P	IC		1
IC304	PQVIHD7LS04P	IC		1
IC305	PQVIHD7L244P	IC		1
		(TRANSISTORS)		
Q300A-Q300H	2SA937	Transistor (Si)		8
Q301A-Q301H	2SB909M	Transistor (Si)	S	8
Q302A-Q302H	2SD1225M	Transistor (Si)	S	8

Ref. No.	Part No.	Part Name & Description	Pcs
Q303A-Q303H, Q304A-Q304H, Q305A-Q305H	2SC2021	Transistor (Si)	24
Q306A-Q306H	UN1122	TRansistor (Si)	8
Q307A-Q307H	DTC124EA	TRansistor (Si)	8
Q308A-Q308H	Not Used		
Q309A-Q309H	Not Used		
Q310A-Q310H	Not Used		
Q311A	DTC124EA	Transistor (Si)	1
Q311B	DTC124EA	Transistor (Si)	1
Q312A	DTA124EA	Transistor (Si)	1
Q312B	DTA124EA	Transistor (Si)	1
		(DIODES)	
D300A-D300H, D301A-D301H	MA4047	Diode (Si)	16
D302A-D302H,	1SS131	Diode (Si)	8
D303A-D303H, D304A-D304H	Not Used		
D305A-D305H	1SS131	Diode (Si)	8
D306A-D306H	Not Used		
D307A-D307H	MA4056	Diode (Si)	8
D308A-D308H, D309A-D309H, D310A-D310H, D311A-D311H, D312A-D312H D313, D314A, D314B	1SS131	Diode (Si)	43
		(VARISTORS)	
ZNR 30A-ZNR 30H, ZNR 31A-ZNR 31H, ZNR32, ZNR33	ERZC03DK241	Varistor	18
		(THERMISTORS)	
PHT 30A-PHT 30H	PQRPAR8R2M	Thermistor	8

Ref. No.	Part No.	Value, Part Name and Description	Pcs
		(COMPONENT COMBINATIONS)	
Z300	EXBP88472K	Resistor Array S	1
Z301	PQRS8B8102J	Resistor Array	1
Z302	EXBP84103K	Resistor Array S	1
		(PHOTO ELECTRIC TRANSDUCERS)	
PC 300A-PC 300H	PQVIPC817K	Photo Coupler	8
		(CRYSTAL OSCILLATOR)	
X300	PQVCX4000N8Z	Crystal Oscillator	1
		(TRANSFORMERS)	
T300A-T300H	ETA14Y85AY	Transformer	8
T301A-T301H	ETE13K38AY	Transformer	8
		(COILS)	
L300A-L300H, L301A-L301H,	PQLQZM2R2M	Choke Coil	16
		(RELAYS)	
RLY 30A-RLY 30H	PQSL41A		8
RLY31A	PQSL49Z	⚠	1
RLY31B	PQSL49Z	⚠	1
		(RESISTORS)	
R300A-R300H	ERD16TJ330	33	8
R301A-R301H	ERD16TJ220	22	8
R302A-R302H, R303A-R303H	ERD16TJ682	6.8k	16
R304A-R304H	ERD16TJ220	22	8
R305A-R305H	ERD16TJ330	33	8
R306A-R306H	PQRD2TJ102	1k	8
R307A-R307H	ERD16TJ153	15k	8
R308A-R308H	ERD16TJ123	12k	8
R309A-R309H	ERD16TJ101	100	8
R310A-R310H	ERD16TJ473	47k	8
R311A-R311H, R312A-R312H	ERD16TJ121	120	16
R313A-R313H	ERD16TJ222	2.2k	8
R314A-R314H	ERD16TJ221	220	8
R315A-R315H	ERD16TJ472	4.7k	8

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Ref. No.	Part No.	Value, Part Name & Description		Pcs
R316A-R316H, R317	ERD16TJ103	10k		9
R318	Not Used			
R319	ERD16TJ472	4.7k		1
R320	Not Used			
R321	ERD16TJ472	4.7k		1
R322	Not Used			
R323	ERD16TJ103	10k		1
R324	Not Used			
R325	Not Used			
R326	ERD16TJ105	1M		1
R327-R331	ERD16TJ103	10k		5
		(CAPACITORS)		
C301A-C301H	ECEA1HU3R3	3.3	S	8
C302A-C302H	ECEA1HU2R2	2.2		8
C303A-C303H	ECEA1HU3R3	3.3	S	8
C304A-C304H	ECEA1HN4R7S	4.7		8
C305A-C305H, C306A-C306H	ECEA1HU010	1		16
C307A-C307H, C308A-C308H	ECKD1H103MD	0.01		16
C309	ECCD1H221J	220P		1
C310	ECEA1HU100	10		1
C311	Not Used			
C312	Not Used			
C313	ECKD1H223MD	0.022		1
C314	Not Used			
C315	Not Used			
C316	Not Used			
C317	PQCBC1C103MY	0.01		1
C318	ECEA1EU101	100		1
C319	Not Used			
C320	ECEA1EU470	47	S	1
C321	ECEA1EU101	100		1
C322	ECEA1EU101	100		1
C323	Not Used			
C324	Not Used			
C325	ECCD1H220JC	22P		1
C326	ECCD1H220JC	22P		1
C327A-C327H, C328A-C328H	ECKD1H471KB	470P		16
		(OTHERS)		
1	PQDF996Z	Shaft		2
2	PQUB11Z	Plastic Parts, Latch		2
CNA	PQJS50Q30Z	Socket, 50P		1
CNB	PQJP8S30Z	Connector, 8P		1
CNC	PQJP45S30Z	Connector, 45P		1

Ref. No.	Part No.	Part Name & Description	Pcs
		CO-1 BOARD PARTS	
PCB5	KX-T123280	CO-1 P.C. Board Ass'y (NLA) (Supply by business route)	1
		(ICs)	
IC200A-IC200D, IC201A-IC201D	PQVINJM4558D	IC	8
IC202A-IC202D	PQVINJ7301D	IC	4
IC203	PQVIBU3149	IC	1
IC204	PQVI672191F	IC	1
IC205	PQVIHD7L640P	IC	1
IC206	PQVIHD7LS08P	IC	1
IC207	PQVIHD7LS04P	IC	1
		(TRANSISTORS)	
Q200A-Q200D	2SC2590	Transistor (Si) ⚠	4
Q201A-Q201D	Not Used		
Q202A-Q202D, Q203A-Q203D Q204A-Q204D	DTC124EA	Transistor (Si)	12
		(DIODES)	
D201A-D201D	MA4150	Diode (Si) ⚠	4
D202A-D202D	Not Used		
D203A-D203D	PQVDS1YB40F1	Diode (Si) ⚠	4
D204A-D204D, D205A-D205D	MA4047	Diode (Si)	8
D206A-D206D	1SS131	Diode (Si)	4
D207A-D207D	Not Used		
D208A-D208D	PQVDSV03YSW	Diode (Si) ⚠	4
D209A-D209D, D210A-D210D, D211A-D211D. D212A-D212D	1SS131	Diode (Si) ⚠	16
D213A-D213D	Not Used		
D214A-D214D, D215A-D215D, D216A-D216D	1SS131	Diode (Si)	12
		(PHOTO ELECTRIC TRANSDUCERS)	
PC 200A-PC 200D	PQVIPC817K	Photo Coupler ⚠	4
PC 201A-PC 201D	PQVITLP521	Photo Coupler ⚠	4

Ref. No.	Part No.	Value, Part Name & Description	Pcs
		(VARISTORS)	
ZNR 20A-ZNR 20D, ZNR 21A-ZNR 21D	PQVDDSS401M	Varistor ⚠	8
ZNR 22A-ZNR 22D	ERZC07DK820	Varistor ⚠	4
		(CERAMIC FILTER)	
X201	PQVBFC3584A1	Ceramic Filter	1
		(RELAYS)	
RLY 20A-RLY 20D	PQSL34Z	Relay ⚠	4
RLY 21A-RLY 21D	PQSL63Z	Relay ⚠	4
RLY 22A-RLY 22D	PQSL41Z	Relay ⚠	4
		(TRANSFORMERS)	
T200A-T200D	ETA14Y85AY	Transformer ⚠	4
		(COILS)	
L200A-L200D, L202A-L202D	PQLQZL101K	Choke Coil ⚠	8
L201A-L201D, L203A-L203D	PQLQZK100K	Choke Coil ⚠	8
L204A-L204D, L205A-L205D	PQLQZK220K	Choke Coil	8
		(RESISTORS)	
R200A-R200D	ERD16TJ151	150 ⚠	4
R201A-R201D	ERDS1TJ223	22k ⚠	4
R202A-R202D	ERDS2TJ102	1k ⚠	4
R203A-R203D	ERD16TJ5R6	5.6 ⚠	4
R204A-R204D	ERD16TJ822	8.2k ⚠	4
R205A-R205D	ERD25TJ330	33 ⚠	4
R206A-R206D	ERD16TJ473	47	4
R207A-R207D	ERD16TJ472	4.7k	4
R208A-R208D	ERD16TJ473	47 ⚠	4
R209A-R209D	Not Used		
R210A-R210D, R211A-R211D	ERO16CKF1211	1.21k	8

Ref. No.	Part No.	Value	Pcs
R212A-R212D, R213A-R213D	ERO16CKF1003	100k	8
R214A-R214D	Not Used		
R215A-R215D, R216A-R216D	ERO16CKF1003	100k	8
R217A-R217D	Not Used		
R218A-R218D	ERO16CKF2613	261k	4
R219A-R219D	ERD16TJ102	1k	4
R220A-R220D, R221A-R221D	ERO16CKF1211	1.21k	8
R222A-R222D	Not Used		
R223A-R223D, R224A-R224D, R225A-R225D, R226A-R226D	ERO16CKF1003	100k	16
R227A-R227D	Not Used		
R228A-R228D	ERO16CKF2613	261k	4
R229A-R229D	ERD16TJ391	390	4
R230A-R230D	ERD16TJ152	1.5k	4
R231A-R231D	Not Used		
R232A-R232D	ERD16TJ471	470	4
R233A-R233D	ERD16TJ122	1.2k	4
R234A-R234D	Not Used		
R235A-R235D	ERD16TJ471	470	4
R236A-R236D	ERD16TJ122	1.2k	4
R237A-R237D	ERD16TJ105	1M	4
R238A-R238D	Not Used		
R239A-R239D	ERD16TJ102	1k ⚠	4
R240	Not Used		
R241	Not Used		
R242	Not Used		
R243	ERD16TJ472	4.7k	1
R244	Not Used		
R245A-R245D	ERD16TJ105	1M	4
R246	ERD16TJ103	10k	1
R247-	ERD16TJ223	22k	4
R250	Not Used		
R251	ERD16TJ101	100	1
R252	ERD16TJ105	1M	1
R253A-R253D, R254	ERD16TJ103	10k	6
R255	Not Used		
R256	Not Used		
R257	Not Used		
R258	ERD16TJ102	1k	1
R259	Not Used		
R260	ERD16TJ470	47	1

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Ref. No.	Part No.	Value, Part Name & Description		Pcs
R261	ERD16TJ184	180k		1
		(CAPACITORS)		
C200A-C200D	ECQE1104KN	0.1		4
C201A-C201D	ECQE2474KS	0.47	⚠	4
C202A-C202D, C203A-C203D	ECEA1HU220	22	⚠	8
C204A-C204D	ECQV1H104JZ	0.1		4
C205A-C205D	ECEA1HU220	22	⚠	4
C206A-C206D	ECKD1H102KB	0.001		4
C207A-C207D, C208A-C208D	ECFD1E683MD	0.068		8
C209A-C209D, C210A-C210D	ECCD1H560KC	56P		8
C211A-C211D	ECFD1E333MD	0.033		4
C212A-C212D	Not Used			
C213A-C213D	ECFD1E183MD	0.018		4
C214A-C214D	Not Used			
C215A-C215D	ECFD1E183MD	0.018		4
C216	Not Used			
C217	ECKD1H223MD	0.022		1
C218	Not Used			
C219	ECKD1H223MD	0.022		1
C220	ECKD1H223MD	0.022		1
C221	ECKD1H223MD	0.022		1
C222	ECKD1H103MD	0.01		1
C223	Not Used			
C224	Not Used			
C225A-C225D	ECKDKC222KB	0.0022	⚠	4
C226	ECEA1EU101	100		1
C227	Not Used			
C228	ECEA1EU470	47	S	1
C229	ECEA1EU470	47	S	1
C230	ECEA1EU101	100		1
C231	ECEA1CSS102	1000		1
C232	Not Used			
C233-C237	Not Used			
C238A-C238D	ECKD1H103MD	0.01		4
C239	ECEA1HU100	10		1
		(OTHERS)		
1	PQDF996Z	Shaft		2
2	PQUB11Z	Plastic Parts, Latch		2
CNB	PQJP8S30Z	Connector, 8P		1
CNC	PQJP45S30Z	Connectro, 45P		1
MJ1-4	PQJJ1TA11Z	Jack	⚠	4

Ref. No.	Part No.	Part Name & Description		Pcs
		CO-2 BOARD PARTS		
PCB6	KX-T123281	CO-2 P.C. Board Ass'y (NLA) (Supply by business route)		1
		(ICs)		
IC200A-IC200B, IC201A-IC201B	PQVINJM4558D	IC		4
IC202A	PQVINJ7301D	IC		1
IC202B	PQVINJ7301D	IC		1
IC203	PQVIBU3149	IC		1
IC204	PQVI672191F	IC		1
IC205	PQVIHD7L640P	IC		1
IC206	PQVISN7LS08N	IC		1
IC207	PQVIHD7LS04P	IC		1
		(TRANSISTORS)		
Q200A	2SC2590	Transistor (Si)	⚠	1
Q200B	2SC2590	Transistor (Si)	⚠	1
Q201A	Not Used			
Q201B	Not Used			
Q202A, Q202B, Q203A, Q203B, Q204A, Q204B	DTC124EA	Transistor (Si)		6
				1
		(DIODES)		
D201A	MA4150	Diode (Si)	⚠	1
D201B	MA4150	Diode (Si)	⚠	1
D202A	Not Used			
D202B	Not Used			
D203A	PQVDS1YB40F1	Diode (Si)	⚠	1
D203B	PQVDS1YB40F1	Diode (Si)	⚠	1
D204A, D204B, D205A, D205B	MA4047	Diode (Si)		4
D206A	1SS131	Diode (Si)		1
D206B	1SS131	Diode (Si)		1
D207A	Not Used			
D207B	Not Used			
D208A	PQVDSV03YSW	Diode (Si)	⚠	1
D208B	PQVDSV03YSW	Diode (Si)	⚠	1
D209A, D209B, D210A, D210B, D211A, D211B, D212A, D212B	1SS131	Diode (Si)	⚠	8
D213A	Not Used			
D213B	Not Used			
D214A, D214B, D215A, D215B, D216A, D216B	1SS131	Diode (Si)		6
		(CERAMIC FILTER)		
X201	PQVBFC3584A1	Ceramic Filter		1
		(PHOTO ELECTRIC TRANSDUCERS)		
PC200A	PQVIPC817K	Photo Coupler	⚠	1
PC200B	PQVIPC817K	Photo Coupler	⚠	1
PC201A	PQVILP521	Photo Coupler	⚠	1
PC201B	PQVILP521	Photo Coupler	⚠	1

Ref. No.	Part No.	Value, Part Name & Description	Pcs
		(VARISTORS)	
ZNR20A	PQVDDSS401M	Varistor ⚠	4
ZNR20B			
ZNR21A			
ZNR21B			
ZNR22A	ERZC07DK820	Varistor ⚠	1
ZNR22B	ERZC07DK820	Varistor ⚠	1
			1
		((RELAYS)	
RLY20A	PQSL34Z	Relay ⚠	1
RLY20B	PQSL34Z	Relay ⚠	1
RLY21A	PQSL63Z	Relay ⚠	1
RLY21B	PQSL63Z	Relay ⚠	1
RLY22A	PQSL41Z	Relay ⚠	1
RLY22B	PQSL41Z	Relay ⚠	1
		(TRANSFORMERS)	
T200A	ETA14Y85AY	Transformer ⚠	1
T200B	ETA14Y85AY	Transformer ⚠	1
		(COILS)	
L200A,	PQLQZL101K	Choke Coil ⚠	4
L200B,			
L202A,			
L202B			
L201A,	PQLQZK100K	Choke Coil ⚠	4
L201B,			
L203A,			
L203B			
L204A,	PQLQZK220K	Choke Coil	4
L204B,			
L205A,			
L205B			
		(RESISTORS)	
R200A	ERD16TJ151	150 ⚠	1
R200B	ERD16TJ151	150 ⚠	1
R201A	ERDS1TJ223	22k ⚠	1
R201B	ERDS1TJ223	22k ⚠	1
R202A	ERDS2TJ102	1k ⚠	1
R202B	ERDS2TJ102	1k ⚠	1
R203A	ERD16TJ5R6	5.6 ⚠	1
R203B	ERD16TJ5R6	5.6 ⚠	1
R204A	ERD16TJ822	8.2k ⚠	1
R204B	ERD16TJ822	8.2k ⚠	1
R205A	ERD25TJ330	33 ⚠	1
R205B	ERD25TJ330	33 ⚠	1
R206A	ERD16TJ473	47k	1
R206B	ERD16TJ473	47k	1
R207A	ERD16TJ472	4.7k	1
R207B	ERD16TJ472	4.7k	1
R208A	ERD16TJ473	47k	1
R208B	ERD16TJ473	47k	1
R209A	Not Used		
R209B	Not Used		
R210A,	ERO16CKF1211	1.21k	4
R210B,			
R211A,			
R211B			
R212A,	ERO16CKF1003	100k	4
R212B,			
R213A,			
R213B,			
R214A	Not Used		
R214B	Not Used		
R215A,	ERO16CKF1003	100k	4
R215B,			
R216A,			
R216B			
R217A	Not Used		
R217B	Not Used		
R218A	ERO16CKF2613	261k	1
R218B	ERO16CKF2613	261k	1
R219A	ERD16TJ102	1k	1
R219B	ERD16TJ102	1k	1

Ref. No.	Part No.	Value	Pcs
R220A,	ERO16CKF1211	1.21k	4
R220B,			
R221A,			
R221B			
R222A	Not Used		
R222B	Not Used		
R223A,	ERO16CKF1003	100k	8
R223B,			
R224A,			
R224B,			
R225A,			
R225B,			
R226A,			
R226B			
R227A	Not Used		
R227B	Not Used		
R228A	ERO16CKF2613	261k	1
R228B	ERO16CKF2613	261k	1
R229A	ERD16TJ391	390	1
R229B	ERD16TJ391	390	1
R230A	ERD16TJ152	1.5k	1
R230B	ERD16TJ152	1.5k	1
R231A	Not Used		
R231B	Not Used		
R232A	ERD16TJ471	470	1
R232B	ERD16TJ471	470	1
R233A	ERD16TJ122	1.2k	1
R233B	ERD16TJ122	1.2k	1
R234A	Not Used		
R234B	Not Used		
R235A	ERD16TJ471	470	1
R235B	ERD16TJ471	470	1
R236A	ERD16TJ122	1.2k	1
R236B	ERD16TJ122	1.2k	1
R237A	ERD16TJ105	1M	1
R237B	ERD16TJ105	1M	1
R239A	ERD16TJ102	1k ⚠	1
R239B	ERD16TJ102	1k ⚠	1
R240A	Not Used		
R240B	Not Used		
R241A	Not Used		
R241B	Not Used		
R242A	Not Used		
R242B	Not Used		
R243	ERD16TJ472	4.7k	1
R244	Not Used		
R245A	ERD16TJ105	1M	1
R245B	ERD16TJ105	1M	1
R246	ERD16TJ103	10k	1
R247,	ERD16TJ223	22k	4
R248,			
R249,			
R250			
R251	ERD16TJ101	100	1
R252	ERD16TJ105	1M	1
R253A	ERD16TJ103	10k	4
R253B,			
R254,			
R255			
R256	ERD16TJ223	22k	1
R257	ERD16TJ223	22k	1
R258	ERD16TJ102	1k	1
R259	Not Used		
R260	ERD25TJ470	47	1
R261	ERD16TJ184	180k	1
		(CAPACITORS)	
C200A	ECQE1104KN	0.1 ⚠	1
C200B	ECQE1104KN	0.1 ⚠	1
C201A	ECQE2474KS	0.47 ⚠	1
C201B	ECQE2474KS	0.47 ⚠	1
C202A,	ECEA1HU220	22 ⚠	4
C202B,			
C203A,			
C203B			
C204A	ECQV1H104JZ	0.1	1

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Ref. No.	Part No.	Value, Part Name & Description		Pcs
C204B	ECQV1H104JZ	0.1		1
C205A	ECEA1HU220	22	⚠	1
C205B	ECEA1HU220	22	⚠	1
C206A	ECKD1H102KB	0.001		1
C206B	ECKD1H102KB	0.001		1
C207A, C207B, C208A, C208B	ECFD1E683MD	0.068		4
C209A, C209B, C210A, C210B	ECCD1H560KC	56P		4
C211A	ECFD1E333MD	0.033		1
C211B	ECFD1E333MD	0.033		1
C212A	Not Used			
C212B	Not Used			
C213A	ECFD1E183MD	0.018		1
C213B	ECFD1E183MD	0.018		1
C214A	Not Used			
C214B	Not Used			
C215A	ECFD1E183MD	0.018		1
C215B	ECFD1E183MD	0.018		1
C216	Not Used			
C217	ECKD1H223MD	0.022		1
C218	Not Used			
C219, C220, C221	ECKD1H223MD	0.022		3
C222	ECKD1H103MD	0.01		1
C223	Not Used			
C224	Not Used			
C225A	ECKDKC222KB	0.0022	⚠	1
C225B	ECKDKC222KB	0.0022	⚠	1
C226	ECEA1EU101	100		1
C227	Not Used			
C228, C229	ECEA1EU470	47	S	2
C230	ECEA1EU101	100		1
C231	ECEA1CSS102	1000		1
C232-C237	Not Used			
C238A	ECKD1H103MD	0.01		1
C238B	ECKD1H103MD	0.01		1
C239	ECEA1HU100	10		1
C240A	ECKDKC222KB	0.0022		1
C240B	ECKDKC222KB	0.0022		1
		(OTHERS)		
1	PQDF996Z	Shaft		2
2	PQHR9200Z	Spacer		1
3	PQUB11Z	Latch		2
CNB	PQJP8S30Z	Connector, 8P		1
CNC	PQJP45S30Z	Connector, 45P		1
MJ1,2	PQJJ1TA11Z	Jack, Telephone	⚠	2

POWER BOARD PARTS

PCB7	PQWP7T123210	Power P.C. Board Ass'y (NLA)		1
		(TRANSISTORS)		
Q50	2SC2673	Transistor (Si)		1
Q51	2SB1015	Transistor (Si)		1
Q52	2SA881	Transistor (Si)		1
Q53	2SD1406	Transistor (Si)		1
		(DIODES)		
D50,51	PQVDS3V10LF	Diode (Si)		2
D52,53, D54	1SS131	Diode (Si)		3
D55,56	PQVDS3V10LF	Diode (Si)		2
D57,58	1SR35-200	Diode (Si)		2
LED1-3	LN28RPL	LED	S	3

Ref. No.	Part No.	Value, Part Name & Description		Pcs
		(VARISTOR)		
ZNR50	PQVDDSS401M	Varistor		1
		(RESISTORS)		
R50	ERD16TJ823	82k		1
R51	ERD16TJ103	10k		1
R52	PQRD1VJ1R0	1		1
R53	ERDS1TJ181	180		1
R54,55	ERDS1TJ151	150		2
R56	ERDS1TJ181	180		1
R57	ERD16TJ103	10k		1
R58	PQRD1VJ1R0	1		1
R59	ERD16TJ103	10k		1
R60	ERD16TJ104	100k		1
R61	ERDS1TJ101	100		1
R62	ERD16TJ562	5.6k		1
R63	ERD16TJ822	8.2k		1
R64	ERD16TJ272	2.7k		1
		(CAPACITORS)		
C50	ECET35S153SW	15000		1
C51	Not Used			
C52	EECW0HS105Z	1	S	1
C53	ECEA1AU222	2200		1
C54	ECKD1H102KB	0.01		1
C55	ECEA1VU101	100		1
		(OTHERS)		
CN17	PQJP5D30Z	Connector, 5P		1
CN18	PQJP6D30Z	Connector, 6P		1
CN19	PQJP10D30Z	Connector, 10P		1
CN50	PQJP8D30Z	Connector,8P		1
CN51	PQJP4D30Z	Connector, 4P		1

POWER UNIT PARTS All ⚠

PCB8	PQLP005Z	Power Unit (NLA)		1
		(ICs)		
IC101	PQVIHA16664	IC		1
IC102	PQVIMB3761M	IC		1
IC201	PQVIL5431	IC		1
IC202, IC203, IC204	PQVIIR3M02	IC		3
IC205	AN6562	IC	S	3
IC206	PQVIL5431	IC		1
		(TRANSISTORS)		
Q101	2SK800	Transistor (Si)		1
Q102	2SA1015	Transistor (Si)		1
Q103	2SA1015	Transistor (Si)		1
Q104	2SC1815	Transistor (Si)		1
Q105	2SC2021	Transistor (Si)		1
Q201	2SA1015	Transistor (Si)		1
Q202	2SA1020	Transistor (Si)		1
Q203	2SC3568	Transistor (Si)		1
Q204	2SC2750	Transistor (Si)		1
Q205	2SB744	Transistor (Si)		1
Q206	2SC1815	Transistor (Si)		1
Q207	2SA1020	Transistor (Si)		1
Q208	2SC3568	Transistor (Si)		1
Q209	2SC1815	Transistor (Si)		1
Q210	DTC143EA	Transistor (Si)		1
Q211	DTC143EA	Transistor (Si)		1
Q212	2SC1815	Transistor (Si)		1

Ref. No.	Part No.	Part Name and Description		Pcs
		(DIODES)		
D101	PQVDD5SB60	Diode (Si)		1
D102	PQVD10DF6	Diode (Si)		1
D103	PQVD10DF6	Diode (Si)		1
D104	PQVDERA22-02	Diode (Si)		1
D105	PQVDRD10ESB	Diode (Si)		1
D106	1SS131	Diode (Si)		1
D107	Not Used			
D108	PQVDRD18FB	Diode (Si)		1
D109	PQVDRD20JSB	Diode (Si)		1
D110	PQVDS1WB60	Diode (Si)		1
D111	PQVDRD12JSB	Diode (Si)		1
D201	PQVDC25P20F	Diode (Si)		1
D202	PQVD11ES2	Diode (Si)		1
D203	PQVDF10P04Q	Diode (Si)		1
D204	PQVDRD4.3ESB	Diode (Si)		1
D205	PQVD11ES2	Diode (Si)		1
D206	1SS92			1
D207	PQVDF10P20FU	Diode (Si)		1
D208	PQVDRD18JSB	Diode (Si)		1
D209	PQVD11ES2	Diode (Si)		1
D210	PQVDF10P10Q	Diode (Si)		1
D211	PQVDRD13JSB	Diode (Si)		1
D212	PQVD11ES2	Diode (Si)		1
D213	PQVDF10P04Q	Diode (Si)		1
		(PHOTO ELECTRIC TRANSDUCERS)		
PC101, PC102, PC201	PQVITLP521	Photo Coupler		3
		(THYRISTOR)		
SCR201	PQVTAC12DSM	Thyristor		1
		(VARISTOR)		
SA103	ERZC14DK271U	Varister		1
		(COILS & TRANSFORMERS)		
L101	PQLE9008Z	Choke Coil		1
L102	PQLE9009Z	Choke Coil		1
L103	PQLE9007Z	Choke Coil		1
L201	PQLE9006Z	Choke Coil		1
L202	PQLE9005Z	Choke Coil		1
L203	PQLE9003Z	Choke Coil		1
L204	PQLE9006Z	Choke Coil		1
L205	PQLE9002Z	Choke Coil		1
L206	PQLE9004Z	Choke Coil		1
L207	PQLE9003Z	Choke Coil		1
L208	PQLE9001Z	Choke Coil		1
T101	PQLT9002Z	Switching Transformer		1
T201	PQLT9001Z	Drive Transformer		1
		(VARIABLE RESISTORS)		
VR101	EVM38GA00B54	Semi-Fixed, 50kΩ (B)	S	1
VR201	EVM38GA00B53	Semi-Fixed, 5kΩ (B)	S	1
VR202	EVM38GA00B13	Semi-Fixed, 1kΩ (B)	S	1
VR203	PQN9002Z	Semi-Fixed, 1kΩ (B)		1
VR204	PQN9001Z	Semi-Fixed, 2kΩ (B)		1
		(OTHERS)		
CR119	PQVDMGC4R3R2	Component Combination		1
CR120	PQVDMGC4R3R2	Component Combination		1
SW101	EST15302T	Switch, Power		1
RL201	PQSL9001Z	Relay		1
F101	XBA1C50NU100	Fuse, 5A, 125V		1
F201	XBA1C100NU10	Fuse, 10A, 125V		1
CN1	PQJS9002Z	Connector, 8P		1
CN2	PQJS9001Z	Connector, 4P		1
100	PQJA9003Z	AC Cord		1
101	PQHR104Z	Clamper, AC Cord		1
102	RHR993Z	Band		4

Ref. No.	Part No.	Value	Pcs
R101	ERTD5FFL5R0P	Thermistor	1
R101	ERTD5FFL5R0P	Thermistor	1
		(CAPACITORS)	
C101	ECQU1A224MH	0.22	1
C102	ECKDKC472MF	4700P	1
C103	ECKDKC222KB	2200P	1
C104	ECKDKC222KB	2200P	1
C105	ECES2DG102Z	1000	1
C106	ECQE6103KF	0.01	1
C107	ECKD3A471KBL	470P	1
C108	ECEA1HGA100	10	1
C109	ECEA1HG010SK	1	1
C110	ECQM1H153JV	0.015	1
C111	ECQM1H152JV	0.0015	1
C112	ECEA1HGA100	10	1
C113	ECEA1HGA100	10	1
C114	ECEA1HGA100	10	1
C115	ECEA1HGA100	10	1
C116	ECEA1HGA100	10	1
C117	Not Used		
C118	Not Used		
C119	Not Used	3.2	1
C120	Not Used	3.2	1
C121	ECKDKC472MF	4700P	1
C122	ECKDKC332KB2	3300P	1
C123	ECKDKC332KB2	3300P	1
C124	ECKDKC472MF	4700P	1
C200	Not Used		
C201	ECKD3A102KBN	1000P	1
C202	ECKD3A471KBL	470P	1
C203	ECEA1EG332S	3300	1
C204	ECEA1HG010SK	1	1
C205	ECEA1EG332S	3300	1
C206	ECQM1H104JV	0.1	1
C207	ECEA1HG010SK	1	1
C208	ECEA1HGA100	10	1
C209	ECQM1H473JV	0.047	1
C210	ECQM1H153JV	0.015	1
C211	ECQM1H102JV	0.001	1
C212	ECEA1AG222K	2200	1
C213	ECQM1H104JV	0.1	1
C214	ECEA1AG222K	2200	1
C215	ECEA1HGA100	10	1
C216	ECQM1H473JV	0.047	1
C217	ECQM1H104JV	0.1	1
C218	ECEA1HG4R7SK	4.7	1
C219	ECQM1H104JV	0.1	1
C220	ECQM1H104JV	0.1	1
C221	ECQM1H102JV	0.001	1
C222	ECEA1EGA222	2200	1
C223	ECEA1EGA222	2200	1
C224	ECEA1EGA222	2200	1
C225	ECEA1HG010SK	1	1
C226	ECEA1HGA100	10	1
C227	ECQM1H473JV	0.047	1
C228	ECQM1H102JV	0.001	1
C229	ECEA1EGA222	2200	1
C230	ECQM1H104JV	0.1	1
C231	ECEA1EGA222	2200	1
C232	ECEA1HGA100	10	1
C233	ECQE1474KF	0.47	1
C234	ECKDKC222KB	2200P	1
C235	ECQM1H103JV	0.01	1
		(RESISTORS)	
R103	ERD2TJ473	47k	1
R104	ERD2TJ104	100k	1
R105	ERDS1TJ220	22	1
R106	ERD2TJ100	10	1
R107	ERD16TJ683	68k	1
R108	ERD16TJ103	10k	1
R109	ERD16TJ472	4.7k	1
R110	ERD16TJ102	1k	1
R111	ERD16TJ221	220	1

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Ref. No.	Part No.	Value	Pcs
R112	ERD16TJ103	10k	1
R113	ERD16TJ222	2.2k	1
R114	ERD16TJ333	33k	1
R115	ERD16TJ471	470	1
R116	ERD16TJ103	10k	1
R117	ERDS1TJ101	100	1
R118	ERD2TJ683	68k	1
R119	ERDS1TJ913	91k	1
R120	ERD16TJ122	1.2k	1
R121	ERD16TJ331	330	1
R122	ERD16TJ473	47k	1
R123	ERD16TJ103	10k	1
R124	ERD16TJ103	10k	1
R201	ERD1TJ220	22	1
R202	ERD1TJ100	10	1
R203	ERD16TJ102	1k	1
R204	ERD16TJ183	18k	1
R205	ERD16TJ222	2.2k	1
R206	ERD16TJ561	560	1
R207	ERD16TJ471	470	1
R208	ERD16TJ102	1k	1
R209	ERD16TJ223	22k	1
R210	ERD16TJ104	100k	1
R211	ERD16TJ103	10k	1
R212	ERD16TJ103	10k	1
R213	ERD16TJ104	100k	1
R214	ERD16TJ682	6.8k	1
R215	ERD16TJ103	10k	1
R216	ERD16TJ332	3.3k	1
R217	ERD16TJ680	68	1
R218	ERD1TJ102	1k	1
R219	ERD16TJ100	10	1
R220	ERD16TJ470	47	1
R221	ERD16TJ102	1k	1
R222	ERF2AJR05	0.05	1
R223	ERD16TJ681	680	1
R224	ERD16TJ183	18k	1
R225	ERD16TJ682	6.8k	1
R226	ERD16TJ562	5.6k	1
R227	ERD16TJ101	100	1
R228	Not Used		
R229	Not Used		
R230	Not Used		
R231	Not Used		
R232	ERD16TJ103	10k	1
R233	ERD16TJ103	10k	1
R234	ERD16TJ222	2.2k	1
R235	Not Used		
R236	ERD16TJ104	100k	1
R237	ERD16TJ682	6.8k	1
R238	ERD16TJ273	27k	1
R239	ERD16TJ103	10k	1
R240	ERD16TJ183	18k	1
R241	ERD1TJ102	1k	1
R242	ERDS1TJ101	100	1
R243	ERD3TJ3R3	3.3	1
R244	ERDS1TJ150	15	1
R245	ERD16TJ470	47	1
R246	ERD16TJ102	1k	1
R247	ERD16TJ821	820	1
R248	ERD16TJ104	100k	1
R249	ERD16TJ103	10k	1
R250	ERD16TJ103	10k	1
R251	ERD16TJ104	100k	1
R252	ERD16TJ682	6.8k	1
R253	ERD16TJ103	10k	1
R254	ERD16TJ680	68	1
R255	ERD1TJ102	1k	1
R256	ERD16TJ100	10	1
R257	ERD16TJ470	47	1
R258	ERD16TJ332	3.3k	1
R259	ERF2AJR05	0.05	1
R260	ERD16TJ122	1.2k	1
R261	ERD16TJ223	22k	1
R262	ERD16TJ103	10k	1
R263	ERD16TJ222	2.2k	1

Ref. No.	Part No.	Value	Pcs
R264	ERD16TJ470	47	1
R265	ERD16TJ471	470	1
R266	ERD16TJ471	470	1
R267	ERD16TJ471	470	1
R268	ERD16TJ472	4.7k	1
R269	ERD16TJ102	1k	1
R270	ERD16TJ153	15k	1
R271	ERD16TJ102	1k	1
R272	ERD16TJ271	270	1
R273	Not Used		
R274	ERD16TJ152	1.5k	1
R275	ERDS1TJ152	1.5k	1
R276	ERD16TJ104	100k	1
R277	ERD16TJ682	6.8k	1
R278	ERD16TJ102	1k	1

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F5

Service Manual

EASA-PHONE

EMSS PROPRIETARY TELEPHONE

KX-T123230

SPECIFICATIONS\ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ
IC DATA\ДАННЫЕ МИКРОСХЕМЫ
BLOCK DIAGRAM\БЛОК-СХЕМА
IC BLOCK DIAGRAM\БЛОК-СХЕМА МИКРОСХЕМЫ
ACCESSORIES AND PACKING MATERIALS\ДОПОЛНИТЕЛЬНЫЕ ПРИНАДЛЕЖНОСТИ И УПАКОВОЧНЫЕ МАТЕРИАЛЫ
TERMINAL GUIDE OF IC·S, TRANSISTORS AND DIODES\ЦОКОЛЕВКА МИКРОСХЕМ, ТРАНЗИСТОРОВ И ДИОДОВ
SCHEMATIC DIAGRAM\ПРИНЦИПИАЛЬНАЯ СХЕМА
ADJUSTMENTS\РЕГУЛИРОВКИ
CABINET AND ELECTRICAL PARTS LOCATION\РАСПОЛОЖЕНИЕ ЧАСТЕЙ КОРПУСА И ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ
REPLACEMENT PARTS LIST\СПИСОК ЗАПАСНЫХ ЧАСТЕЙ

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50 Meadowland Parkway,
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Panasonic Hawaii Inc.
91-238 Kauhi St. Ewa Beach
P.O. Box 774
Honolulu, Hawaii 96808-0774

Matsushita Electric of Canada Limited
5770 Ambler Drive, Mississauga,
Ontario, L4W 2T3

Panasonic Sales Company, Division of Matsushita Electric of Puerto Rico, Inc.
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Panasonic

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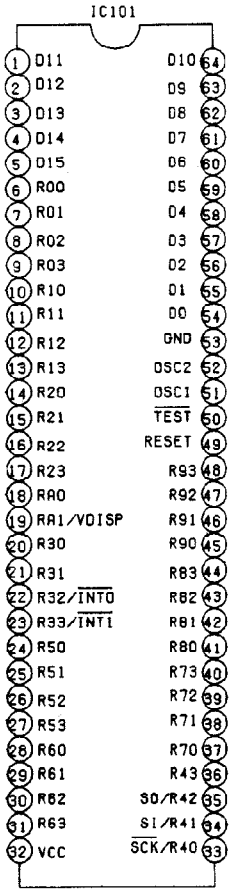
■ SPECIFICATIONS

Ringer Equivalence:	1.0 B
Station Loop Limit:	40 ohms
Cabling Method:	2 pair wire
Jacks:	EMSS, Handset/Headset
Display:	16 digits (max.)
Dimensions:	158 (W) × 95 (H) × 228 (D) mm with handset (6 7/32" × 3 3/4" × 8 31/32")
Weight:	1 kg (2 lb 3.2 oz)

Design and specifications are subject to change without notice.

IC DATA



IC101:	PQVI4045SF76
Program ROM:	4K Byte (4 bit)
Internal RAM:	1K bit
Clock Frequency:	2.5 MHz
Power Supply Voltage:	2.7–6 V

Pin No.	Mark	Function	High	Low
1	D11	LED Control Output	ON	OFF
2	D12	LED Control Output	ON	OFF
3	D13	LED Control Output	ON	OFF
4	D14	LED Control Output	ON	OFF
5	D15	LED Control Output	ON	OFF
6	R00	LED Control Output	ON	OFF
7	R01	LED Control Output	ON	OFF
8	R02	LED Control Output	ON	OFF
9	R03	LED Control Output	ON	OFF
10	R10	Handset Mute	ON	OFF
11	R11	Not used	——	——
12	R12	LED Control	ON	OFF
13	R13	SP-Phone Relay Control	ON	OFF
14	R20	Tone Control Output	ON	OFF
15	R21	Tone Control Output	ON	OFF
16	R22	Tone Control Output	ON	OFF
17	R23	Tone Control Output	ON	OFF
18	RA0	Data Input	Disable	Enable
19	RA1/VDISP	Ground	——	——

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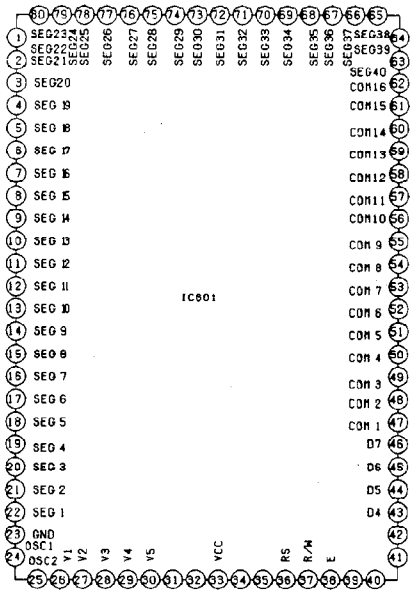
Pin No.	Mark	Function	High	Low
20	R30	Key Input	Disable	Enable
21	R31	Key Input	Disable	Enable
22	R32/$\overline{INT0}$	Interrupt Input	Standby	Active
23	R33/$\overline{INT1}$	Interrupt Input	Standby	Active
24	R50	Key Data Input/LCD Data Ouput	(LCD) ——— (Key) Disable	(LCD) ——— (Key) Enable
25	R51	Key Data Input/LCD Data Ouput		
26	R52	Key Data Input/LCD Data Ouput		
27	R53	Key Data Input/LCD Data Ouput		
28	R60	Key-Scan Output/LCD Data Output	Normal	Active
29	R61	Key-Scan Output/LCD Data Output	Normal	Active
30	R62	Key-Scan Output/LCD Data Output	(LCD) Normal	(LCD) Active
31	R63	Key-Scan Output/LCD Data Output	(Key) Normal	(Key) Normal
32	V_{CC}	(+) Power Source Terminal	———	———
33	$\overline{SCK}$/R40	Interrupt Output	Disable	Enable
34	SI/R41	DTMF Control	Normal	Active
35	SO/R42	DTMF Control	Normal	Active
36	R43	DTMF Control	Normal	Active
37	R70	DTMF Control	Normal	Active
38	R71	DTMF Control	Normal	Active
39	R72	DTMF Control	Normal	Active
40	R73	DTMF Control	Normal	Active
41	R80	Handset Power Control Output	ON	OFF
42	R81	Chip Select Control Output	OFF	ON
43	R82	SP-Phone SP Mute Control Output	ON	OFF
44	R83	SP-Phone MIC Mute Control Output	ON	OFF
45	R90	Power Fail Detect Input	Power Down	Normal
46	R91	Key Input (Tone/Pulse Select Input)	Tone	Pulse
47	R92	Key Input (One Touch Dial Program SW Input)	Program	Set
48	R93	Hook Data Input	Off-Hook	On-Hook
49	RESET	System Reset Input	———	———
50	$\overline{TEST}$	———	———	———
51	OSC1	System Clock	———	———
52	OSC2	System Clock	———	———
53	GND	Ground	———	———
54	D0	DTMF Control Output	Enable	Disable
55	D1	LED Reset Signal Output	Active	Normal
56	D2	Pulse Output	Make	Break
57	D3	LCD Enable Control Output	Active	Normal
58	D4	Key Input/LCD Output Control	ON	OFF
59	D5	Data Input Control	Normal	Active
60	D6	Data Input	Disable	Enable
61	D7	Data Output	Active	Normal
62	D8	LED Control Output	ON	OFF
63	D9	LED Control Output	ON	OFF
64	D10	LED Control Output	ON	OFF



IC601: PQVIHD44780
Display Data RAM: 80×8 bits
Character Generator ROM: 160 characters

Pin No.	Mark	Function	High	Low
1 ~ 22	SEG 22 ~ SEG 1	LCD Segment Signal Output	40 State Output	
63 ~ 80	SEG 40 ~ SEG 23			
23	GND	Ground		
24 25	OSC 1 OSC 2	System Clock		
26 ~ 30	V1 ~ V5	Power Supply for LCD		
31 32		Not used		
33	V_{CC}	Power Supply		
34 35		Not used		
36	RS	Signal to select Resistors	Data Resistor	Instruction Resistor/ Address Resistor
37	R/W	Signal to Select Read and Write	Read	Write
38	E	Operation Start Signal for Data R/W	Active	Normal
39 ~ 42		Not used		
43 ~ 46	D4 ~ D7	Data Bus		
47 ~ 62	COM 1 ~ COM 16	LCD Common Signal Output	16 State Output	

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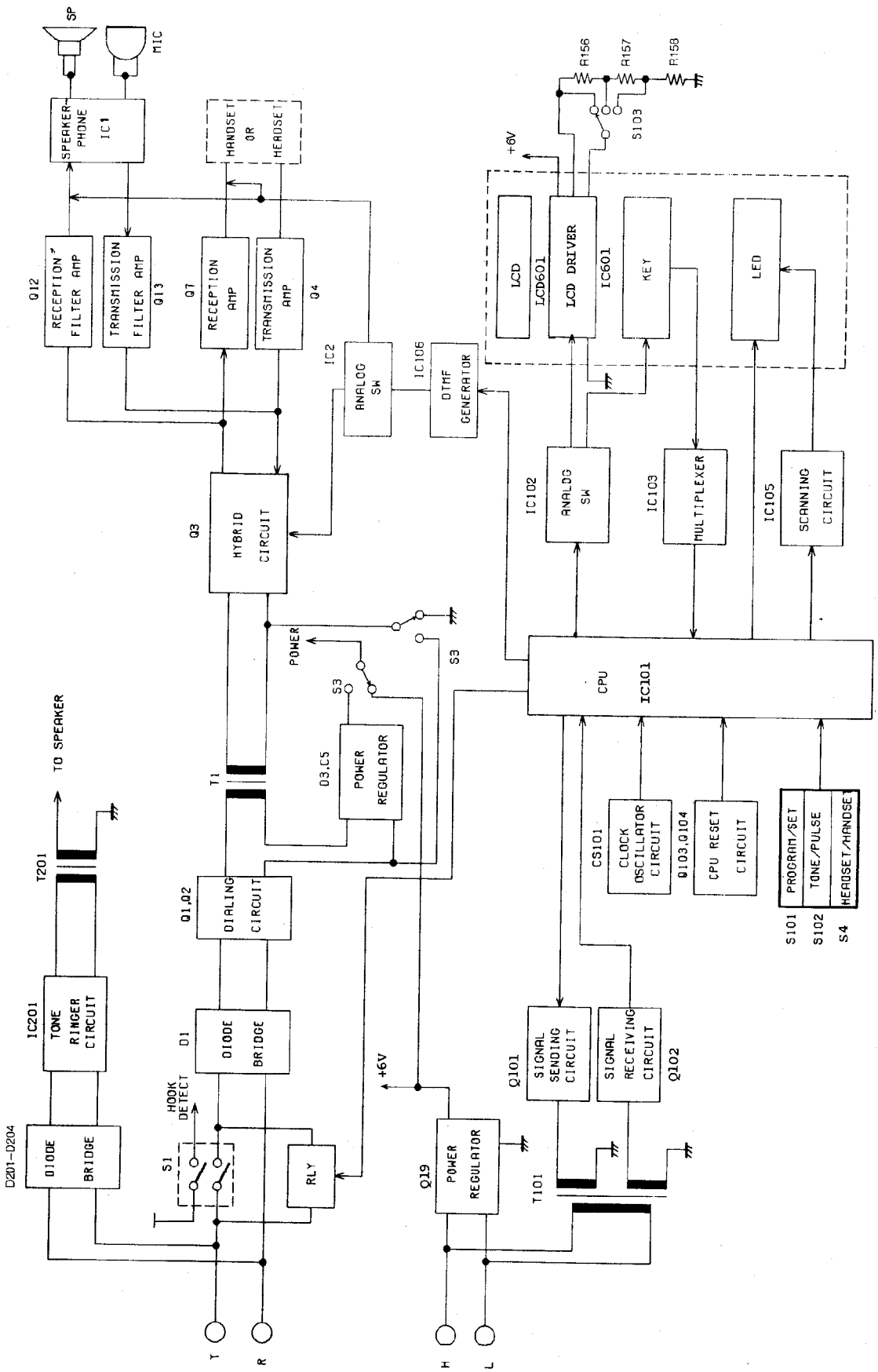
BLOCK DIAGRAM



IC BLOCK DIAGRAM

IC103 PQVITC7H42P

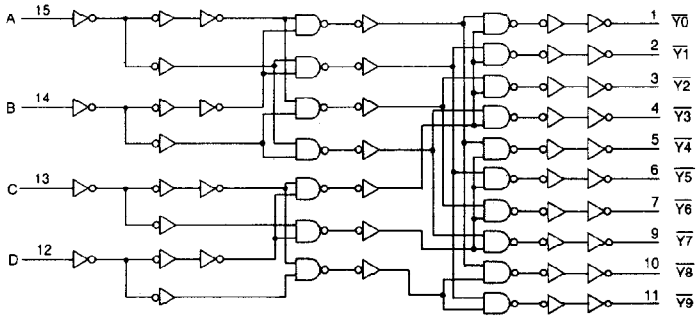


Fig. 9

IC105 PQVITC4017BP

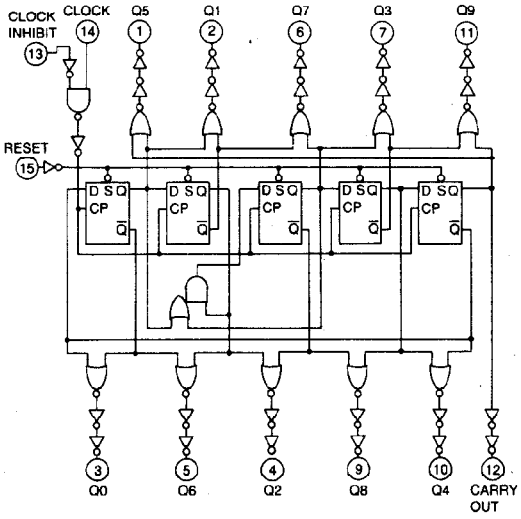


Fig. 10

IC201 PQVIIR3N34A

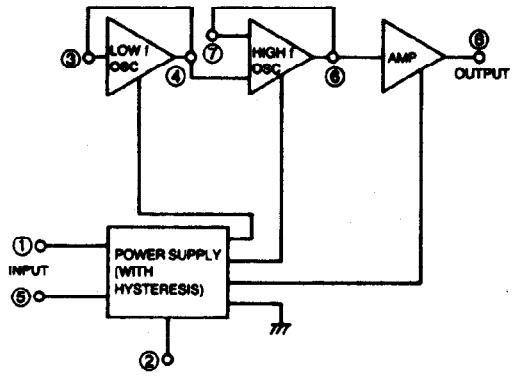


Fig. 11

ACCESSORIES AND PACKING MATERIALS

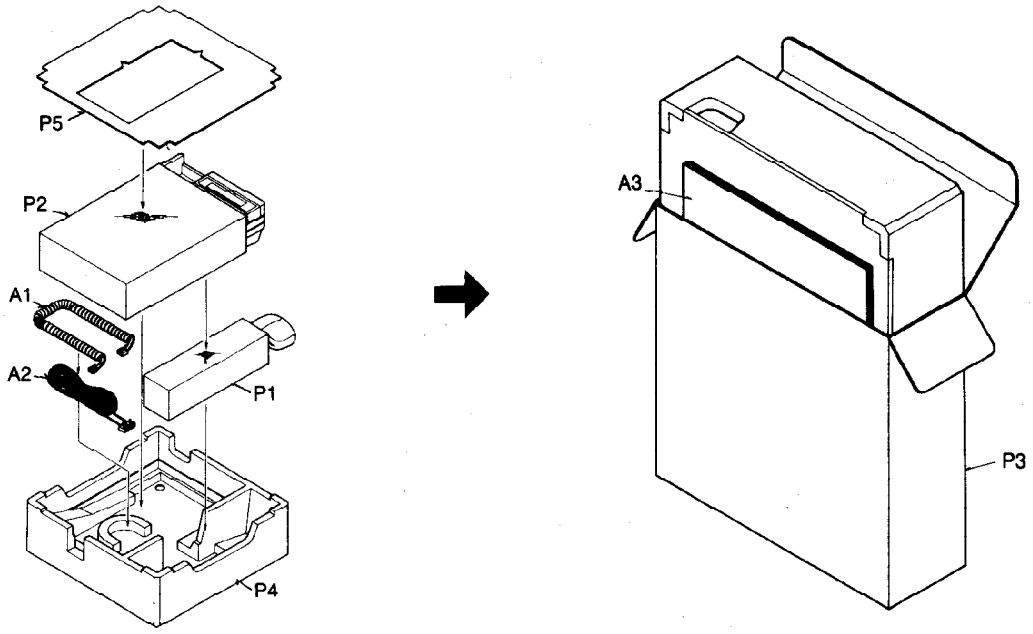


Fig. 12

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TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

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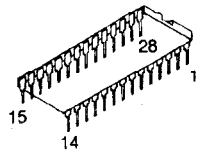
<td> 

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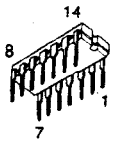
<td colspan="2"> 

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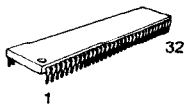
<td> 

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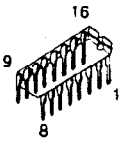
<td> 

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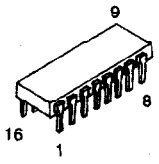
<td> 

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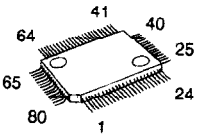
<td> 

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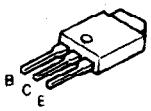
<td> 

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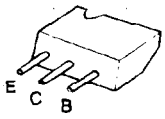
<td> 

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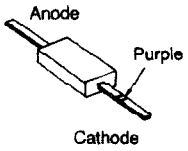
<td> 

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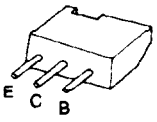
<td colspan="2"> 

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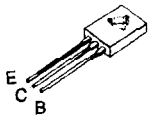
<td> 

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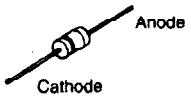
<td> 

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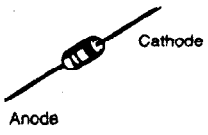
<td> 

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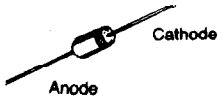
<td colspan="2"> 

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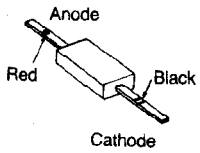
<td> 

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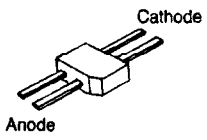
<td> 

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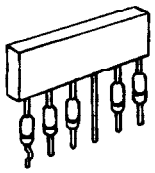
<td> 
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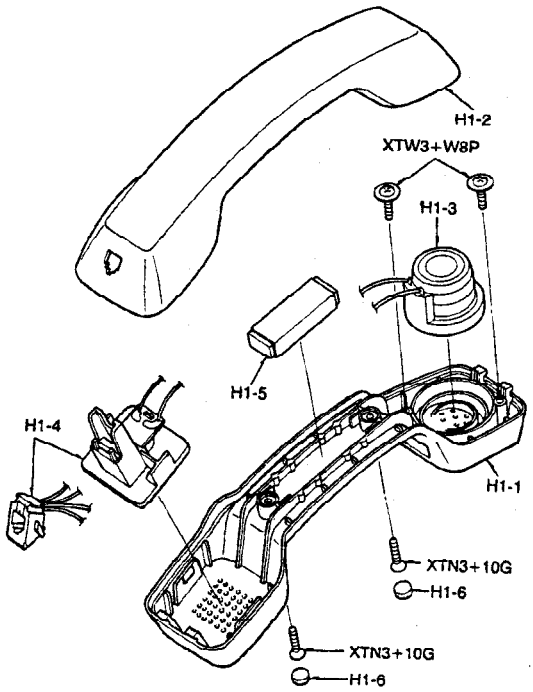
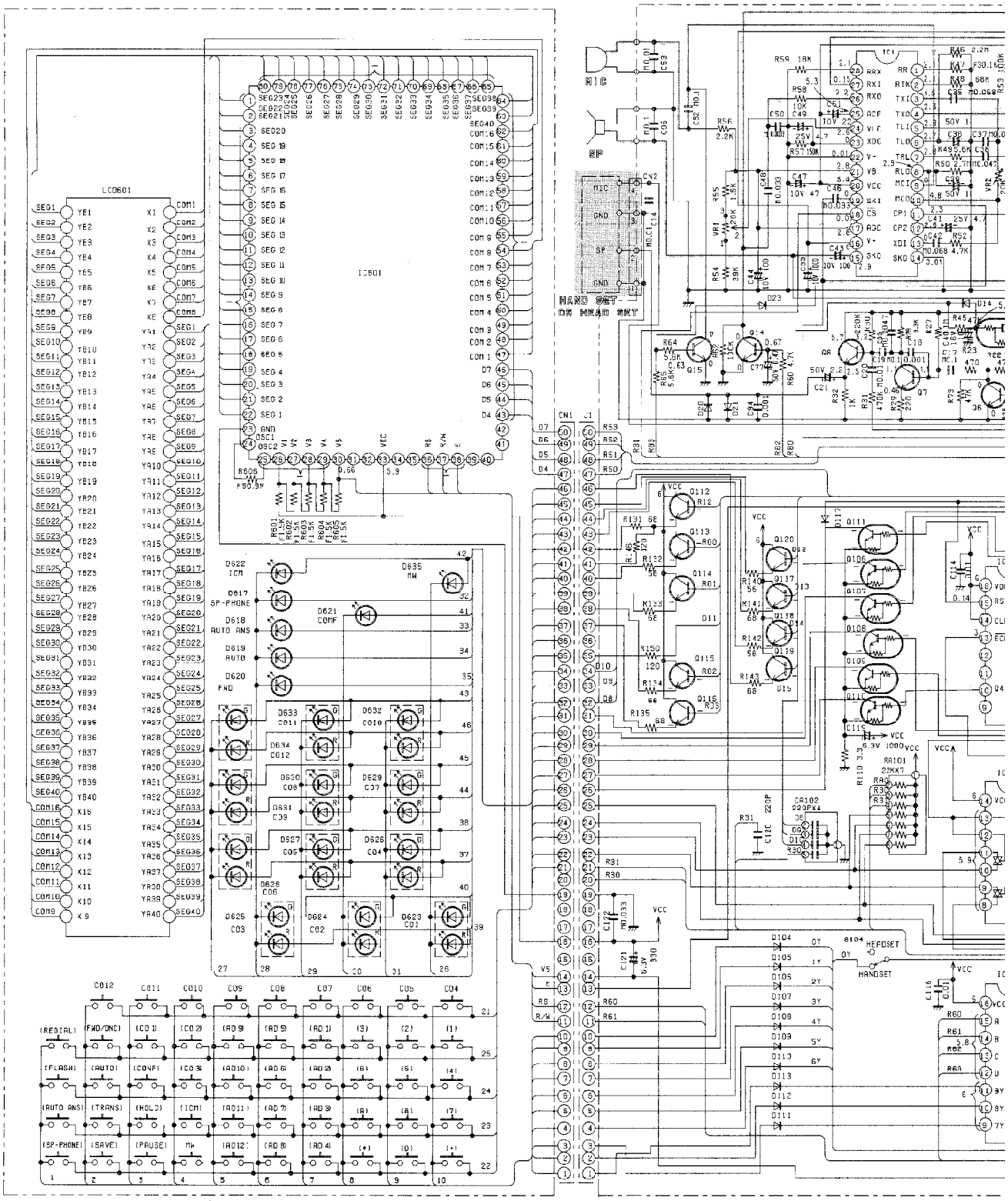
HANDSET PARTS LOCATION





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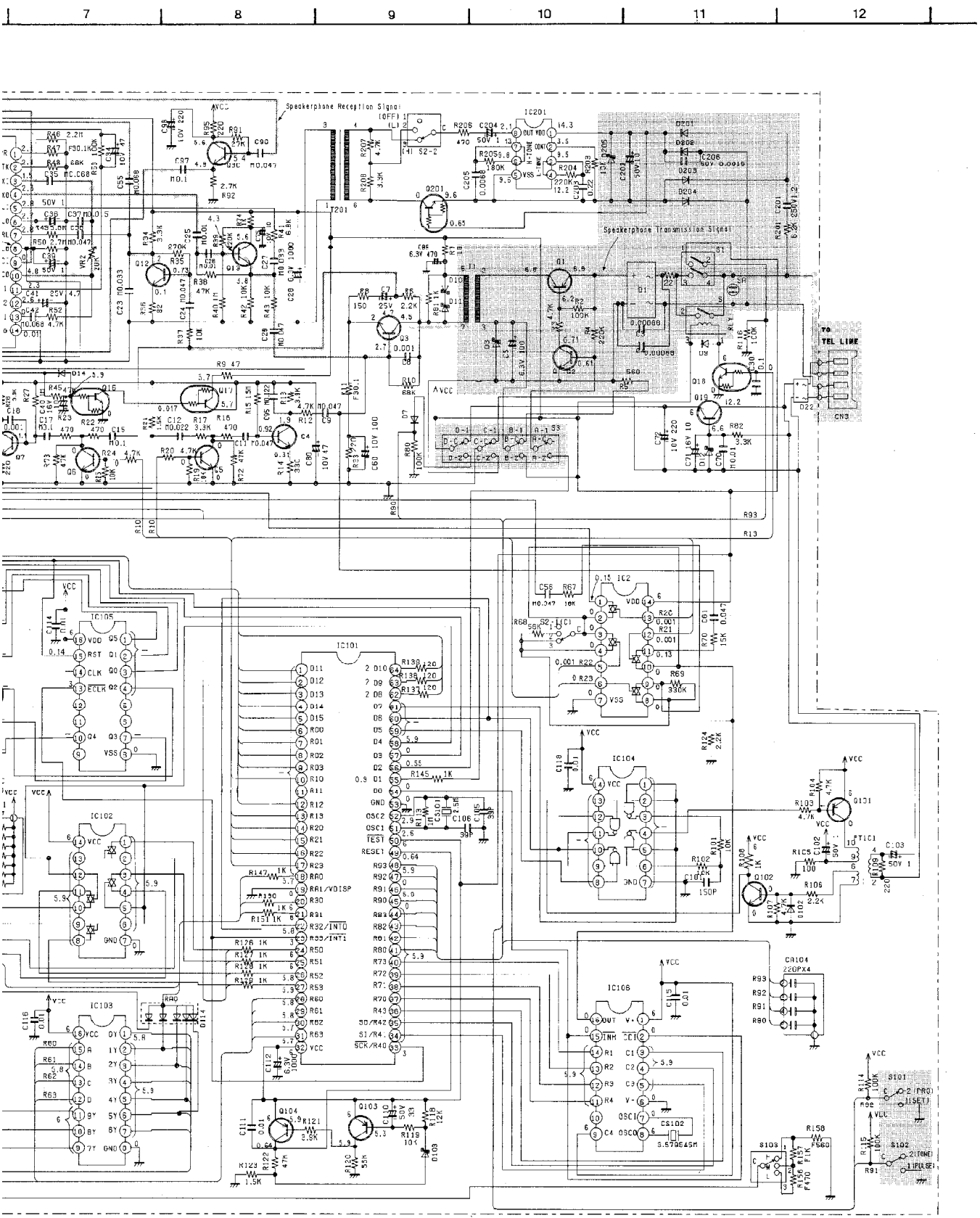
C DIAGRAM



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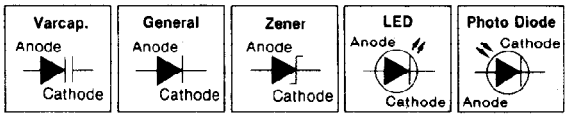
■ FOR SCHEMATIC DIAGRAM

Notes:

1. S1: Hook switch.
2. S2: Ringer volume selector switch in "HIGH" position.
3. S3: Power failure switch.
4. S4: Handset/Headset switch in "HANDSET" position.
5. S101: Memory switch in "PROGRAM" position.
6. S102: Dialing mode switch in "TONE" position.
7. S103: Contrast selector switch in "H" position.
8. S200: Dial switch. (Rubber switch)
9. DC voltage measurements are taken with electronic voltmeter from ground (Q1, Q2 standard point: Q2 emitter).
   (Off-Hook condition
   IC1, Q12, Q13 and Q30...Speakerphone ON condition)
10. This schematic diagram may be modified at any time with the development of new technology.



Important safety notice

The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards.
When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

•ICs, TRANSISTORS AND DIODES FUNCTION NAME

Ref. No.	Part No.	Function Name	Ref. No.	Part No.	Function Name
IC1	PQVISC77655P	SPEAKERPHONE	Q110, 111	DTC143EA	SWITCHING
IC2	PQVIPD4066BC	ANALOG SWITCH	Q19	2SC1567	REGULATOR
			Q101	2SA937	SWITCHING
IC101	PQVI4045SF76	CPU	Q103,104	2SB641	SWITCHING
IC102	PQVITC4066BP	ANALOG SWITCH	Q109	UN1224	SWITCHING
IC103	PQVITC7H42P	MULTIPLEXER			
IC104	PQVITC4011BP	NAND GATE	D1,22	PQVDS1YB40F1	RECTIFIER
IC105	PQVITC4017BP	DECADE COUNTER	D3	MA2051	REGULATOR
IC106	PQVILR4089	GENERATOR	D7,9,14,20	1SS131	SWITCHING
IC201	PQVIIR3N34A	TONE RINGER	21,23,102,		
IC601	PQVIHD44780	LCD DRIVER	104~113,		
			117,201~204		
Q1	2SA1400	SWITCHING	D10,11	MA4047	LIMITER
Q2	2SD662B	SWITCHING	D12	MA4068	REGULATOR
Q3,4,7,8,12,	2SC2021	AMPLIFIER	D103	MA4036	SWITCHING
13,30,102			D114	PQXDF030372	SWITCHING
112~116			D205	MA4300	REGULATOR
Q5,6,14,15	2SD1469	SWITCHING	D617~621, 635	LN01201CU3LF	LED
Q16,201	DTC144A	SWITCHING			
Q17	DTA143XA	SWITCHING	D622	LN01301C3LF1	LED
Q18, 106~108	DTC143EA	SWITCHING	D623~634	LN02102C13LF	LED

ADJUSTMENTS

•Perform the following adjustment after replacing IC1.

Test Equipment:

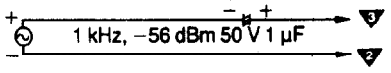
Loop Simulator, DC Power Supply
RC Oscillator
VTVM

Preparation:

1. Set the unit's controls as follows:
   A. VOLUME CONTROL—"MAX"
2. Connect Test Points ▼-▼ and ▼-▼.
3. Disconnect the microphone in the unit.
4. Set the variable resistor of the loop simulator to maximum resistance (fully counterclockwise).
5. Connect the DC power supply.
   (Set voltage...12 V)
6. Connect the unit to the loop simulator.
7. Make all adjustments in a quiet room.
8. After all adjustments are made, disconnect Test Points ▼-▼, ▼- ▼ and connect the microphone.

Transmission Level:

1. Set the loop simulator selector switch to "TX".
2. Connect the RC Oscillator to Test Point ▼(−)-▼(+), and connect an electrolytic capacitor (50 V, 1 µF) as shown below.
3. Set RC Oscillator to 1 kHz, −56 dBm.



4. Connect the VTVM to loop simulator.
5. Adjust VR2 for a reading of −17 dBm, ±0.5 dB, on the VTVM.

Please refer to Printed Circuit Board which is located test points (▼).

Schematic Diagram of Loop Simulator

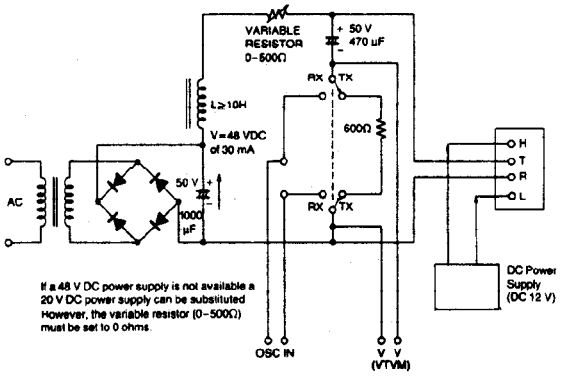


Fig. 14

HANDSET WIRING CONNECTION DIAGRAM

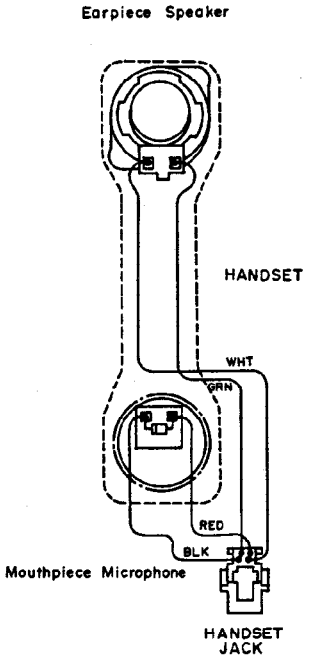


Fig. 15

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CABINET AND ELECTRICAL PARTS LOCATION

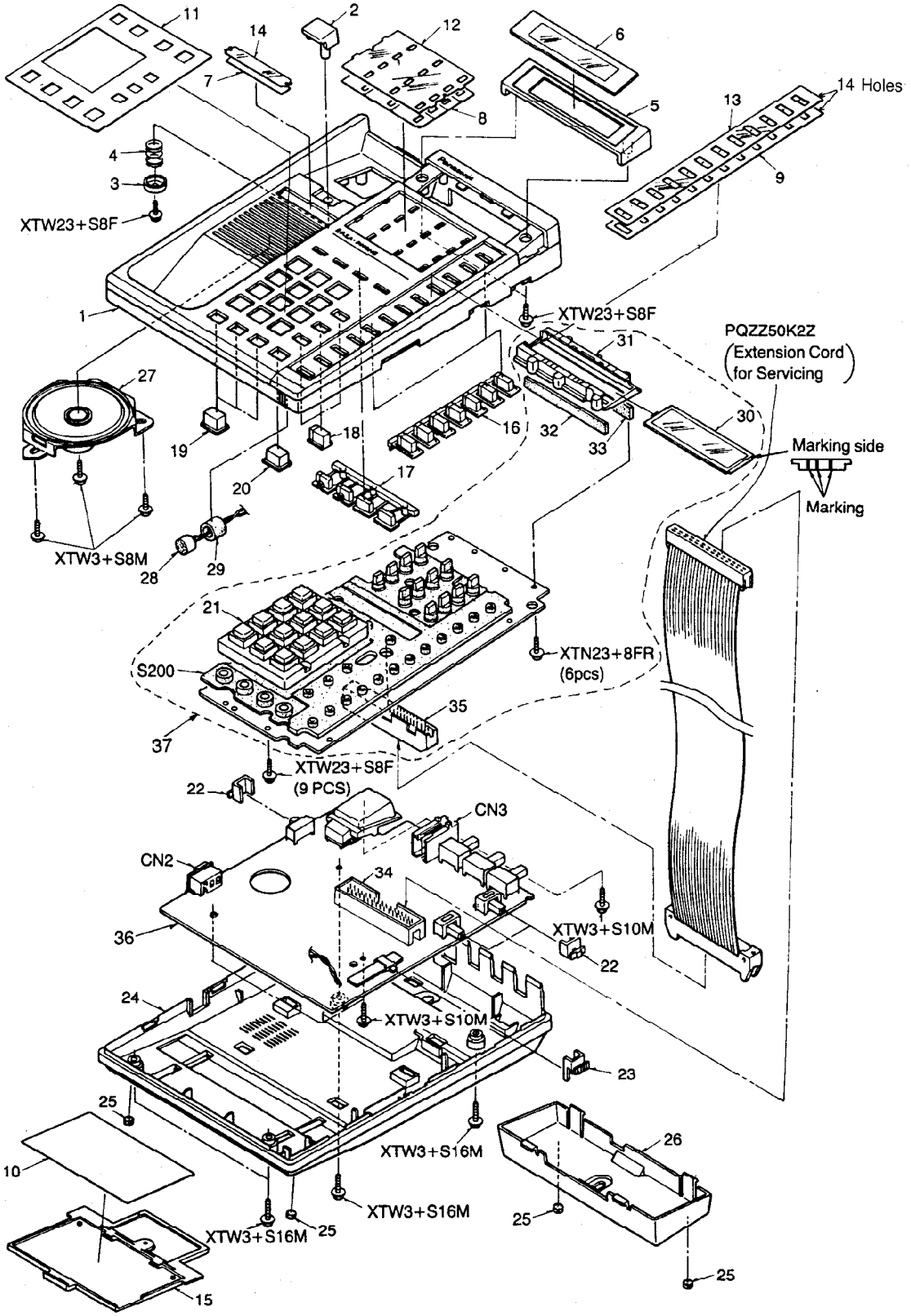

Fig. 16

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REPLACEMENT PARTS LIST

Notes: Model KX-T123230

1. Printed circuit board assembly with mark (NLA) is no longer available after production discontinuation of the complete set..
2. Important safety notice.
   Components identified by the ⚠ mark special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
3. The S mark indicates service standard parts and may differ from production parts.
4. RESISTORS & CAPACITORS
   Unless otherwise specified.
   All resistors are in ohms(Ω) k=1000Ω,M=1000kΩ
   All capacitors are in MICRO FARADS(μF) P= μF
   *Type &Wattage of Resistor

Type

ERC:Solid	ERX:Metal Film	PQRD:Carbon
ERD:Carbon	ERG:Metal Oxide	PQRQ:Fuse
PQ4R:Chip	ERO:Metal Film	ERF:Wire Wound

Wattage

10,16,18:1/8W	14,25,S2:1/4W	12,50,S1:1/2W	1:1W	2:2W	3:3W

Type

ECFD:Semi-Conductor	ECCD,ECKD,PQCBC:Ceramic
ECQS:Styrol	ECQM,ECQV,ECQG,ECQE:Polyster
PQCBX,ECUV:Chip	ECEA,ECSZ,ECEB:Electrolytic
ECMS:Mica	ECQP:Polyproplylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H:50V	05:50V	OF:3.15V	OJ :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :63V
2H:500V		OJ:6.3V	1E,25:25V	2A :100V

Ref. No.	Part No.	Part Name & Description	Pcs	
INTEGRATED CIRCUITS, TRANSISTORS & DIODES				
IC1	PQVISC77655P	IC	1	
IC2	PQVIPD4066BC	IC	1	
IC101	PQVI4045SF76	IC	1	
IC102	PQVITC4066BP	IC	1	
IC103	PQVITC7H42P	IC	1	
IC104	PQVITC4011BP	IC	1	
IC105	PQVITC4017BP	IC	1	
IC106	PQVILR4089	IC	1	
IC201	PQVIIR3N34A	IC	1	
IC601	PQVIHD44780	IC	1	
Q1	2SA1400	Transistor (Si)	1 ⚠	
Q2	2SD662B	Transistor (Si)	1 ⚠	
Q3,4,7,8 Q12,13, Q30,102 Q112-Q120	2SC2021	Transistro (Si)	17	
Q5,6, Q14,15	2SD1469	Transistor (Si)	4	
Q16,201	DTC144A	Transistor (Si)	2	S
Q17	DTA143XA	Transistor (Si)	1	S
Q18,106 Q107, Q108, Q110, Q111	DTC143EA	Transistor (Si)	6	
Q19	2SC1567	Transistor (Si)	1	
Q101	2SA937	Transistor (Si)	1	
Q103, Q104	2SB641	Transistor (Si)	2	
Q109	UN1224	Transistor (Si)	1	

Ref. No.	Part No.	Part Name & Description	Pcs	
D1,22	PQVDS1YB40F1	Diode (Si)	2 ⚠	
D3	MA2051	Diode (Si)	1	
D7,9, D14,20, D21,23, D102, D104-D113, D117, D201-D204	1SS131	Diode (Si)	22	
D10,11	MA4047	Diode (Si)	2	
D12	MA4068	Diode (Si)	1	
D103	MA4036	Diode (Si)	1	
D114	PQXDF030356	Diode (Si)	1	
D205	MA4300	Diode (Si)	1	
D617-D621, D635	LN01201CU3LF	LED	6	
D622	LN01301C3LF1	LED	1	
D623-D634	LN02102C13LF	LED	12	
SWITCHES				
S1	PQSH1B08Z	Switch, Hook	1 ⚠	
S2	PQSS3B09Z	Switch, Ringer Volume	1	
S3	PQSS2D01V	Switch, Power Failure	1	
S4	PQSS2A25Z	Switch, Handset/Headset	1	
S101, S102	PQSS2A12V	Switch, Memory, Dialing Mode	2 ⚠	
S103	PQSS3A14Z	Switch, Contrast	1	
S200	PQSE70Z	Switch, Dial (Rubber Switch)	1 ⚠	
RLY1	PQSL7Z	Relay	1	
TRANSFORMERS				
T1	ETA19Y64BF	Call Transformer	1 ⚠	
T101	ETE13K24AY	Interface Transformer	1	
T201	PQLT2D2B	Interface Transformer	1	
OTHERS				
VR1	PQVAL202B24A	Volume Control, 20kΩ(B)	1	
VR2	PQNB3A00B24M	Semi-Fixed, 20kΩ(B)	1	S
RA101	PQRS8B7223J	Component Combination, Resistor Array	1	
CA102, CA104	PQXF4WB05	Component Combination, Capacitor Array	2	
SA	PQVDDSS401M	Varistor (Surge Absorber)	1	
CS101	PQVCX2500N9	Crystal Oscillator	1	
CS102	PQVBT3.58G3	Ceramic Filter	1	
JACKS				
CN2	PQJJ1TB10Z	Jack, Handset/Headset	1 ⚠	
CN3	PQJJ1TB15Z	Jack, Telephone (EMSS)	1 ⚠	
HANDSET PARTS				
H1	PQJX2PE403Y	Handset Assembly	1	
H1-1	PQKM121Y81	Lower Cabinet	1	
H1-2	PQKF104Z81	Upper Cabinet	1	
H1-3	PQAX4P03Z	Earplece Speaker	1	
H1-4	PQWMJX403Y	Mouthpiece Microphone Assembly	1	
H1-5	PQHM32Y	Weight	1	
H1-6	PQHG695W	Rubber Cap	2	

Ref. No.	Part No.	Part Name & Description	Pcs
		CABINET AND ELECTRICAL PARTS	
1	PQKM83T8	Upper Cabinet	1
2	PQKE20Z9	Hanger, Handset	1
3	RMS35Z	Bracket, Handset Hanger M'tg	1
4	PQUS65Z	Spring	1
5	PQGK50Z	Ornament	1
6	PQGP48Z	Transparent Plate, LCD	1
7	PQHP532X	Card, TEL. No.	1
8	PQHP542Z	Card, Memory Station	1
9	PQHP570Z	Card, COL	1
10	PQHP583Z	Card, Speed Dial (Memory)	1
11	PQHP561Z	Card, Overlay	1
12	PQHR5005Z	Transparent Plate, Memory Station Card	1
13	PQHR5043Z	Transparent Plate, COL Card	1
14	PQHR576Z	Transparent Plate, TEL. No. Card	1
15	PQHR9152Y	Cover, Speed Dial Card	1
16	PQBCX40Z	Button, Station	2
17	PQBCX20Z	Button, CONF/FWD,DND/PAUSE/TRANS	1
18	PQBC114Z	Button, AUTO/AUTO ANS/SP-PHONE	3
19	PQBC115Z	Button, SAVE/REDIAL/FLASH	3
20	PQBC115Z1	Button, HOLD	1
21	PQBCX25Z	Button, Dial (Assembly)	1
22	PQBD62Z	Knob, Ringer, Contrast, Handset/Headset	3
23	PQBD63Z	Knob, Volume	1
24	PQKF73S7	Lower Cabinet	1
25	RHG1028Z	Rubber Parts, Leg	4
26	PQKL10Z	Stand	1
27	PQAS65P06V	Speaker	1
28	RJM142Z	Microphone	1 S
29	PQHG503Z	Rubber Parts, Microphone Cover	1
30	PQADLR110C	LCD (LCD601)	1
31	PQHR9156Y	Holder, LCD	1
32	PQSE51Z	Connector, LCD	1
33	PQSE52Z	Connector, LCD	1
34	PQJP50D30Y	Connector, 50P (CN1)	1
35	PQJS50X33Y	Connector, 50P (CN601)	1
36	PQWP1T123230	Main P.C. Board Assembly (NLA)	1
37	PQWP2T123230	Dial P.C. Board Assembly (NLA)	1
		ACCESSORIES	
A1	PQJA30T	Handset Cord	1 ⚠
A2	PQJA48Y	Telephone Cord	1 ⚠
A3	PQQX5445Z	Instruction Book (User Guide)	1
		PACKING MATERIALS	
P1	PQPH27Y	Protection Cover (for Handset)	1
P2	XZB26x40A01	Protection Cover (for Unit)	1
P3	PQPK492Z	Gift Box	1
P4	PQPN592Z	Pad, Lower	1
P5	PQPN593Z	Pad, Upper	1

Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
		RESISTORS			
R1	ERD25TJ220	22	R15	ERD16TJ155	1.5M
R2	ERD16TJ104	100k ⚠	R16	ERD16TJ471	470
R3	ERD16TJ472	4.7k ⚠	R17	ERD16TJ332	3.3k
R4	ERD16TJ224	220k ⚠	R18	Not Used	
R5	ERD16TJ561	560 ⚠	R19	ERD16TJ103	10k
R6	ERD16TJ222	2.2k	R20	ERD16TJ472	4.7k
R7	ERD16TJ100	10	R21	ERD16TJ152	1.5k
R8	ERD16TJ151	150	R22	ERD16TJ471	470
R9	ERD16TJ470	47	R23	ERD16TJ471	470
R10	ERD16TJ683	68k	R24	ERD16TJ472	4.7k
R11	ERO16CKF30R1	30.1	R25	ERD16TJ103	10k
R12	ERD16TJ472	4.7k	R26	Not Used	
R13	ERD16TJ392	3.9k	R27	ERD16TJ105	1M
R14	ERD16TJ331	330	R28	ERD16TJ332	3.3k

Ref. No.	Part No.	Value	Ref No.	Part No.	Value
R29	ERD16TJ221	220	R106	ERD16TJ222	2.2k
R30	ERD16TJ224	220k	R107	ERD16TJ472	4.7k
R31	ERD16TJ474	470k	R108	ERD16TJ102	1k
R32	ERD16TJ102	1k	R109	ERD16TJ221	220
R33	ERD16TJ221	220	R110	ERD16TJ150	15
R34	ERD16TJ332	3.3k	R111	Not Used	
R35	ERD16TJ274	270k	R112	Not Used	
R36	ERD16TJ820	82	R113	ERD16TJ105	1M
R37	ERD16TJ103	10k	R114	ERD16TJ104	100k
R38	ERD16TJ473	47k	R115	ERD16TJ104	100k
R39	ERD16TJ224	220k	R116	ERD16TJ104	100k
R40	ERD16TJ105	1M	R117	Not Used	
R41	ERD16TJ682	6.8k	R118	ERD16TJ123	12k
R42	ERD16TJ103	10k	R119	ERD16TJ103	10k
R43	ERD16TJ103	10k	R120	ERD16TJ563	56k
R44	Not Used		R121	ERD16TJ392	3.9k
R45	ERD16TJ473	47k	R122	ERD16TJ473	47k
R46	ERD16TJ225	2.2M	R123	ERD16TJ152	1.5k
R47	ERO16CKF3012	30.1k	R124	ERD16TJ222	2.2k
R48	ERD16TJ683	68k	R125	Not Used	
R49	ERD16TJ562	5.6k	R126	ERD16TJ102	1k
R50	ERD16TJ275	2.7M	R127	ERD16TJ102	1k
R51	Not Used		R128	ERD16TJ102	1k
R52	ERD16TJ472	4.7k	R129	ERD16TJ102	1k
R53	ERD16TJ104	100k	R130	ERD16TJ102	1k
R54	ERD16TJ393	39k	R131	ERD16TJ680	68
R55	ERD16TJ152	1.5k	R132	ERD16TJ560	56
R56	ERD16TJ222	2.2k	R133	ERD16TJ680	68
R57	ERD16TJ154	150k	R134	ERD16TJ560	56
R58	ERD16TJ103	10k	R135	ERD16TJ680	68
R59	ERD16TJ183	18k	R136	Not Used	
R60	ERD16TJ472	4.7k	R137	ERD16TJ121	120
R61	Not Used		R138	ERD16TJ121	120
R62	ERD16TJ104	100k	R139	ERD16TJ121	120
R63	Not Used		R140	ERD16TJ560	56
R64	ERD16TJ562	5.6k	R141	ERD16TJ680	68
R65	ERD16TJ562	5.6k	R142	ERD16TJ560	56
R66	Not Used		R143	ERD16TJ680	68
R67	ERD16TJ183	18k	R144	Not Used	
R68	ERD16TJ563	56k	R145	ERD16TJ102	1k
R69	ERD16TJ334	330k	R146	ERD16TJ121	120
R70	ERD16TJ153	15k	R147	ERD16TJ102	1k
R71	Not Used		R148	Not Used	
R72	ERD16TJ473	47k	R149	Not Used	
R73	ERD16TJ473	47k	R150	ERD16TJ121	120
R74	ERD16TJ102	1k	R151	ERD16TJ102	1k
R75	Not Used		R152	Not Used	
R76	Not Used		R153	Not Used	
R77	Not Used		R154	Not Used	
R78	Not Used		R155	Not Used	
R79	Not Used		R156	ERO16CKF4700	470
R80	ERD16TJ104	100k	R157	ERO16CKF1021	1.02k
R81	ERD16TJ102	1k	R158	ERO16CKF5600	560
R82	ERD16TJ332	3.3k			
R83	Not Used		R201	PQRD1TJ622	6.2k
R84	Not Used		R202	Not Used	
R85	Not Used		R203	ERD16TJ103	10k
R86	Not Used		R204	ERD16TJ224	220k
R87	Not Used		R205	ERD16TJ184	180k
R89	Not Used		R206	ERD16TJ471	470
R89	Not Used		R207	ERD16TJ472	4.7k
R90	Not Used		R208	ERD16TJ332	3.3k
R91	ERD16TJ273	27k			
R92	ERD16TJ272	2.7k			
R93	Not Used		R601	ERO10LKF1501	1.5k
R94	Not Used		R602	ERO10LKF1501	1.5k
R95	ERD16TJ221	220	R603	ERO10LKF1501	1.5k
R96	Not Used		R604	ERO10LKF1501	1.5k
R97	Not Used		R605	ERO10LKF1501	1.5k
R98	Not Used		R606	ERO10LKF9092	90.9k
R99	Not Used				
R100	Not Used				
R101	ERD16TJ103	10k			
R102	ERD16TJ103	10k			
R103	ERD16TJ472	4.7k			
R104	ERD16TJ472	4.7k			
R105	ERD16TJ101	100			

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Ref. No.	Part No.	Value	Ref No.	Part No.	Value
C1	Not Used		C78	Not Used	
C2	Not Used		C79	Not Used	
C3	ECKD2H681KB	680P ⚠	C80	ECEA1CKS470	47 S
C4	ECKD2H681KB	680P ⚠	C81	Not Used	
C5	ECEA1CK101	100 S	C82	Not Used	
C6	Not Used		C83	Not Used	
C7	ECEA1HK4R7	4.7 S	C84	Not Used	
C8	ECKD1H102KB	0.001	C85	Not Used	
C9	ECFD1E473MD	0.047 S	C86	Not Used	
C10	Not Used		C87	Not Used	
C11	ECFD1E473MD	0.047 S	C88	Not Used	
C12	ECFD1E223MD	0.022	C89	Not Used	
C13	Not Used		C90	ECFD1E473MD	0.047 S
C14	PQCBC1C103MY	0.01	C91	Not Used	
C15	ECFD1C104MD	0.1	C92	Not Used	
C16	Not Used		C93	PQCBC1C472MX	0.0047
C17	ECFD1C104MD	0.1	C94	ECKD1H102KB	0.001
C18	ECKD1H102KB	0.001	C95	ECFD1E223MD	0.022
C19	ECFD1C104MD	0.1	C96	ECFD1C104MD	0.1
C20	PQCBC1C103MY	0.01	C97	ECFD1C104MD	0.1
C21	ECEA1HKS2R2	2.2	C98	ECEA1AU221	220
C22	Not Used		C99	ECEB0JU471	470
C23	ECFD1C333MD	0.033	C100	Not Used	
C24	ECFD1E473MD	0.047 S	C101	ECCD1H151JC	150P
C25	PQCBC1C103MY	0.01	C102	ECEA50Z1	1
C26	PQCBC1C103MY	0.01	C103	ECEA1HK010	1
C27	ECFD1C333MD	0.033	C104	Not Used	
C28	ECEA0JU102	1000	C105	ECCD1H390KC	39P
C29	ECFD1E473MD	0.047 S	C106	ECCD1H390KC	39P
C30	ECFD1C104MD	0.1	C107	Not Used	
C31	Not Used		C108	Not Used	
C32	Not Used		C109	Not Used	
C33	ECEA0JU102	1000	C110	ECEA1VU330	33
C34	ECEA1CKS470	47 S	C111	ECKD1H103MD	0.01
C35	ECFD1C683MD	0.068	C112	ECEA0JU102	1000
C36	ECEA1HK010	1	C113	Not Used	
C37	ECFD1E153MD	0.015	C114	ECKD1H103MD	0.01
C38	ECFD1E473MD	0.047 S	C115	ECKD1H103MD	0.01
C39	ECEA1HK010	1	C116	ECKD1H103MD	0.01
C40	ECEA1CKS100	10	C117	Not Used	
C41	ECEA1HK4R7	4.7 S	C118	ECKD1H103MD	0.01
C42	ECFD1C683MD	0.068	C119	ECEA0JU102	1000
C43	ECEA1CK101	100 S	C120	ECKD1H221KB	220P
C44	ECEA1AU101	100	C121	ECEA0JU331	330
C45	Not Used		C122	ECFD1C333MD	0.033
C46	ECFD1C333MD	0.033			
C47	ECEA1CKS470	47 S	C201	ECQE2125KZ	1.2 ⚠
C48	ECFD1C333MD	0.033	C202	ECEA1HKS100	10
C49	ECEA1HK4R7	4.7 S	C203	ECQV1H224JZ	0.22
C50	ECKD1H332MD	0.0033	C204	ECEA1HK010	1
C51	ECEA0JKS220	22	C205	ECQM1H682JV	0.0068
C52	ECFD1C104MD	0.1	C206	ECKD1H152MD	0.0015 ⚠
C53	PQCBC1C103MY	0.01			
C54	Not Used				
C55	ECFD1C683MD	0.068			
C56	ECFD1E473MD	0.047 S			
C57	Not Used				
C58	Not Used				
C59	Not Used				
C60	ECEA1CK101	100 S			
C61	ECQV1H473JZ	0.047			
C62	Not Used				
C63	Not Used				
C64	Not Used				
C65	Not Used				
C66	Not Used				
C67	Not Used				
C68	Not Used				
C69	Not Used				
C70	PQCBC1C103MY	0.01			
C71	ECEA1CKS100	10			
C72	ECEA1AU221	220			
C73	Not Used				
C74	Not Used				
C75	ECEA1CKS100	10			
C76	Not Used				
C77	ECEA1HK4R7	4.7			

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ORDER NO. KM48901807A3

Service Manual

EASA-PHONE
EMSS PROPRIETARY TELEPHONE

KX-T123230

- Please use this manual together with the service manual for model No. KX-T123230, order No. KM48710548C1.
- This Service Manual indicates the main differences between; Original KX-T123230 and KX-T123230 (ORDER NO. KM48901807A3).

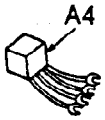
■ SPECIFICATIONS COMPARISON TABLE

KX-T123230 (Original)	**KX-T123230 (ORDER NO. KM48901807A3)**
Ringer Equivalence: 1.0B	————

■ PARTS COMPARISON TABLE

Ref. No.	Part Name & Description	Part No.		Pcs/ Set	Remarks
		KX-T123230 (Original)	**KX-T123230 (ORDER NO. KM48901807A3)**		
IC106	IC	PQVILR4089	**PQVITP5089N**	1	
CS102	Ceramic Filter	PQVBT3.58G3	**PQVBT3.58G4**	1	
24	Lower Cabinet (w/ Name Plate)	PQKF73S7	**PQYFT123230X**	1	
	Name Plate (For Lower Cabinet)	————	**PQGT493Z**	1	Addition
36	Main P.C.Board Assembly (NLA)	PQWP1T123230	--------	0	Deletion
37	Dial P.C.Board Assembly (NLA)	PQWP2T123230	--------	0	Deletion
A1	Handset Cord	PQJA30T	**PQJA128Z**	1	
A3	Instruction Book	PQQX5445Z	**PQQX5744Z**	1	
A4	Telephone Jack	————	**PQJJ1TB4Z**	1	Addition
P3	Gift Box	PQPK492Z	**PQPK691Z**	1	
R70	Resistor, 12kΩ	ERD16TJ153	**ERD16TJ123**	1	

■ ACCESSORIES AND PACKING MATERIALS



[Model KX-T123230 (ORDER NO. KM48901807A3)]

Panasonic

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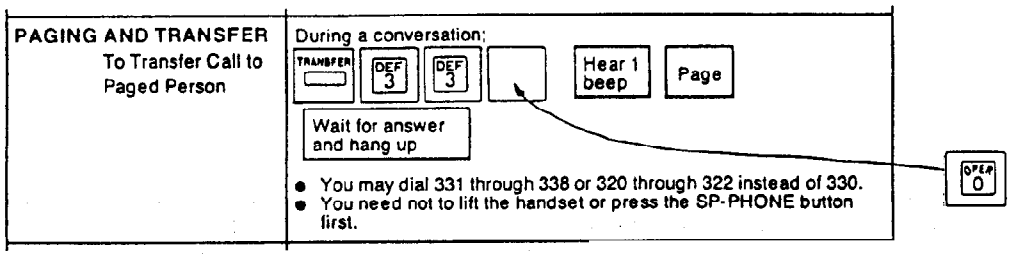
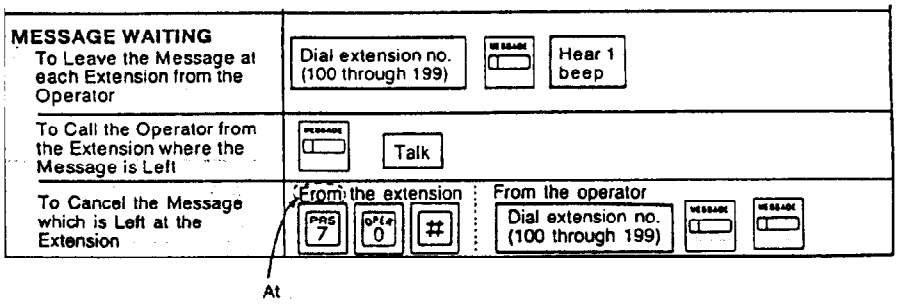
Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

■OPERATIONS

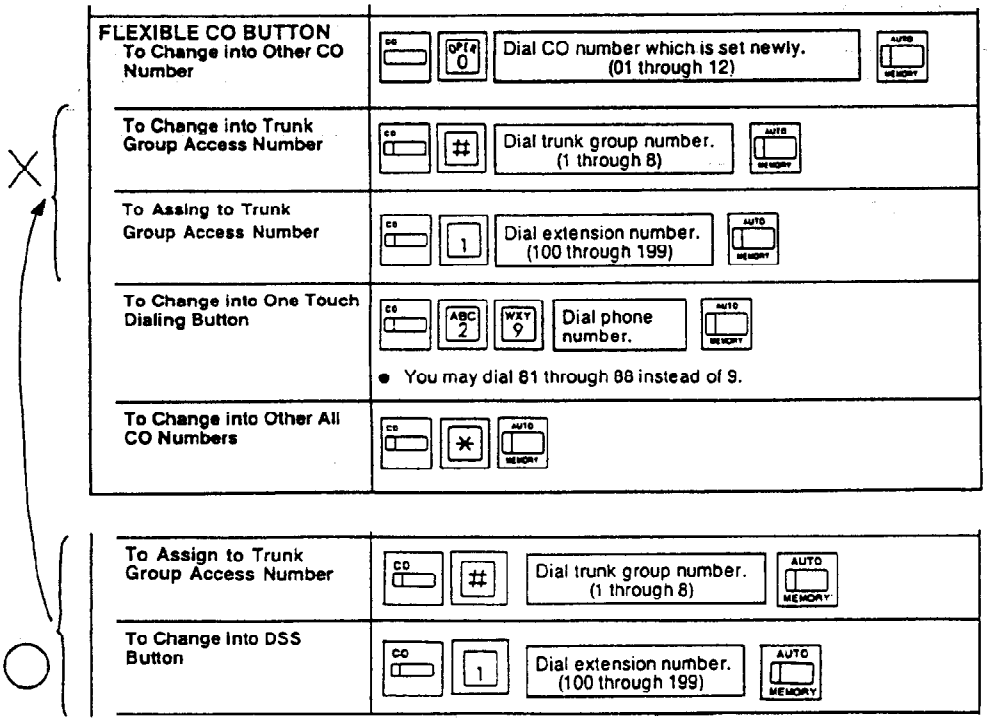
PAGING


PAGING AND TRANSFER
To Transfer Call to Paged Person
During a conversation;
TRANSFER
DEF 3
DEF 3
Hear 1 beep
Page
Wait for answer and hang up
OPER 0
• You may dial 331 through 338 or 320 through 322 instead of 330.
• You need not to lift the handset or press the SP-PHONE button first.

OTHER FEATURES (CONT.)


MESSAGE WAITING
To Leave the Message at each Extension from the Operator
Dial extension no. (100 through 199)
Hear 1 beep
To Call the Operator from the Extension where the Message is Left
Talk
To Cancel the Message which is Left at the Extension
From the extension
From the operator
PRS 7
OPER 0
#
Dial extension no. (100 through 199)
At

STATION PROGRAMMING


FLEXIBLE CO BUTTON
To Change into Other CO Number
Dial CO number which is set newly. (01 through 12)
To Change into Trunk Group Access Number
Dial trunk group number. (1 through 8)
To Assing to Trunk Group Access Number
Dial extension number. (100 through 199)
To Change into One Touch Dialing Button
ABC 2
WXY 9
Dial phone number.
• You may dial 81 through 88 instead of 9.
To Change into Other All CO Numbers
To Assign to Trunk Group Access Number
Dial trunk group number. (1 through 8)
To Change into DSS Button
Dial extension number. (100 through 199)

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